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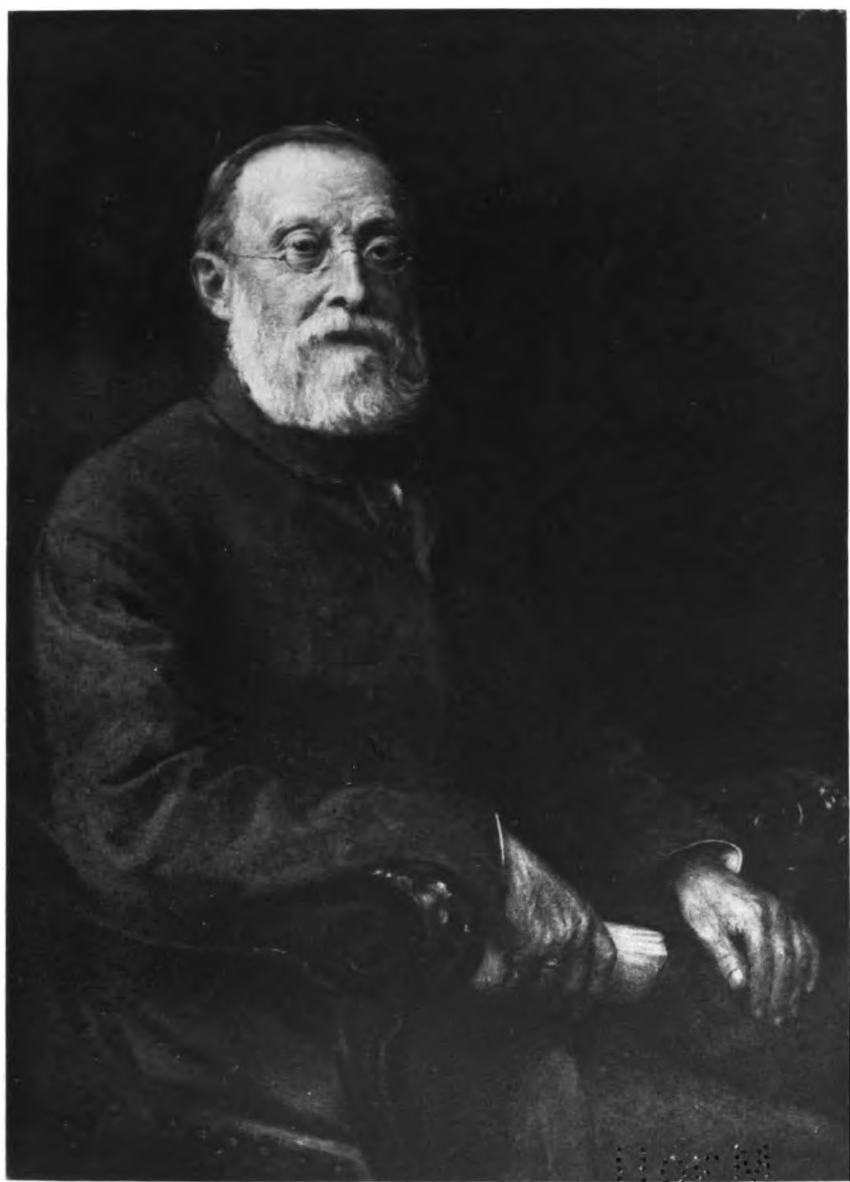
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NO. 1.

CLINICAL LECTURES ON DISEASES OF THE
HEART, LUNGS AND PLEURA.—By Joseph M.
Patton, M.D., *Professor of Internal Medicine,*
Chicago Policlinic.

PERICARDITIS.

Pericarditis is of more frequent occurrence than is generally supposed. It is very liable to pass unrecognized because of the greater prominence of associated conditions.

As a secondary affection it may come on insidiously, and this fact together with the difficulties attendant upon the diagnosis of pericardial inflammation causes it, in many instances, to be overlooked during life.

Pericarditis may occur at any age. Behier cites a case occurring in a child eleven months old. Pericarditis may be acute, or chronic as a sequel to the acute attack. It is probably never idiopathic, though some authorities claim that it may be.

ÆTIOLOGY.—Pericarditis is most frequently associated with rheumatism, pneumonia or nephritis. According to Bamberger's statistics thirty per cent. of the cases are rheumatic. In rheumatism pericarditis is of early occurrence and may develop before or during the first week of the joint symptoms. The number and severity of the rheumatic manifestations do not appear to have any constant relation to the liability of pericardial involvement, or to the nature of

the inflammatory process, though the exudation is generally plastic or fibrinous.

Occurring with pneumonia pericarditis is usually a latent affair. Shattuck found thirteen cases of pericarditis in twenty deaths from pneumonia. In eight per cent. of these cases there were no signs of pericarditis previous to death. In one hundred autopsies on pneumonic cases Osler found five cases of pericarditis.

In pericarditis secondary to pneumonia the exudation is likely to be purulent. Of late years the tendency of purulent inflammations of both pleura and pericardium to complicate the influenza pneumonias has been quite marked.

In Bright's disease pericarditis is usually of late occurrence, and is often a forerunner of the general uræmic state. Pericarditis does not occur with chronic rheumatism and its association with gout is doubtful.

Acute alcoholism may cause pericarditis or it may be secondary to the zymotic diseases, or may be associated with scurvy, enteric fever or pyæmia.

Pericarditis may be secondary to disease of contiguous tissues, as in tuberculosis, inflammations or morbid growths in the lungs, pleuræ, or mediastinum, or to inflammation of the abdominal surface of the diaphragm, perihepatitis or abscess of the liver.

Traumatism through the chest wall or through the œsophagus may cause pericarditis. (Bruist and Flint report cases of fatal pericarditis from swallowing false teeth plates.)

A fact that I would particularly emphasize is the frequent association of pericarditis with other cardiac lesions, particularly with endocarditis in children.

Sturges, in commenting on the frequency of pericarditis in children, either alone or in combination with endocarditis, states that the latter without the former is rare in childhood. In one hundred cases of fatal heart disease Sturges found only six showing no evidence of pericarditis.

Broadbent states that in eighty-six fatal cases of heart disease, thirty-four showed evidence of pericarditis, and in thirty-one it was associated with valvular disease. Osler thinks that tuberculosis ranks close to rheumatism as a

cause of pericarditis. Males appear to suffer oftener than females and there is no age limit.

MORBID ANATOMY.—If you recall the anatomy of the pericardium you will remember that it is a closed sac enveloping the heart, composed of two layers, an external fibrous and an internal serous layer. The fibrous layer is attached below to the central tendon of the diaphragm. Above, both layers envelop the great vessels extending well up towards the beginning of the transverse portion of the aortic arch. The visceral layer of the serous coat is that which is reflected over the heart itself.

Inflammation of the pericardium may affect a portion or the whole of the pericardial surfaces. It may be, and frequently is, limited to that portion surrounding the origin of the great vessels, or it may affect in spots any portion of the pericardium. When the inflammation is fibrinous in character and limited in extent it is apt to occur at the base of the heart about the root of the great vessels or along the transverse groove.

In Bright's disease we often find the most marked changes about the under surface of the right ventricle. Here we may find smooth, white, milky, opaque patches caused by thickening of the serous coat, or there may be cartilaginous plates. In tuberculous pericarditis the localization is apt to be along the course of the cardiac vessels.

The nature of the inflammatory exudate will be serous, fibrinous or purulent; any of these may be hæmorrhagic in character. The serous form occurs in persons whose vitality and resistance is naturally low, or has been reduced by some immediately preceding or concomitant illness. The local injury to the tissues is slight; or, in persons whose vitality is much reduced, an inflammation of considerable intensity may result in serous exudation.

In serous effusion the normal transudation from the vessels is increased with some excess of albumen. It contains very few leucocytes and does not coagulate, or, at most, only a few flakes may be found.

The quantity of the exudate will vary from a few drams to that sufficient to distend enormously the pericardial sac.

With slightly more intense injury we may have fibrin

poured out with the serous effusion and we may find flakes, flat or round masses of fibrin, floating free in the serous effusion,—*sero-fibrinous effusion*. There is usually, however, more or less fibrin suspended in all serous effusions.

Serous effusion may be green, yellow, brown or red in color.

In fibrinous inflammation, as has been stated, there is more intense injury to the tissues. The endothelial lining is damaged. The exudation is more albuminous and is rich in leucocytes. It is very coagulable and masses of lymph accumulate on the surface of the inflamed area. This lymph is composed of leucocytes entangled in the meshes of fibrin.

The leucocytes may be few and be surrounded by a granular or fibrillated matrix. (*Pericarditis sicca*.)

If the process be limited to a small area the opposite surface may become involved by contact and local adhesions may form.

These bands may constrict the great vessels and be the cause of murmurs during life. The layer of fibrinous deposit is apt to be thickest on the parietal layer of the pericardium. If the process involves the whole pericardial surface adhesion of a portion of the pericardial layers may result, or complete obliteration of the pericardial sac may occur (*adherent pericardium*.) As a result of imperfect absorption and the degeneration of inflammatory products with tissue organization, the heart may become surrounded with a mass of calcareous plates which from mechanical reasons and from changes induced in the heart itself may result in failure of that organ.

In fibrinous pericarditis when the exudation of lymph is plentiful, upon separating the pericardial surfaces they may present a rough, hairy appearance and to touch a sensation likened to that of the dorsal surface of a beef's tongue (*cor hirsutum, cor villosum or tomentosum*.) This condition develops within two or three days after the beginning of the inflammation, as in the following case, seen in consultation.

Boy aged 9 years. Rheumatism for two weeks. Mitral regurgitation. On fifteenth day developed pain over heart

with dry, rubbing, to-and-fro friction sound. Death no eighteenth day. Autopsy showed acute endocarditis. Incompetent mitral valve. Dilated heart cavities. Recent plastic pericarditis. The entire heart covered by the visceral layer of the pericardium had a sticky, hairy appearance and feel. It was covered with villousities and vegetations from one-eighth to one-fourth of an inch in height. No fluid in the pericardial sac.

The purulent form of pericarditis is secondary to the acute forms or to empyema, caries of the ribs, suppurative mediastinitis, gangrene of the lungs or may be traumatic or metastatic. It is never primary. In purulent inflammation the injury is intense and prolonged. The exudation contains the same elements as in the fibrinous form but no coagulation occurs; no lymph forms and new vessels are not developed.

Serous and fibrinous stages often precede the purulent stage of inflammation.

Putrefactive changes may occur if drainage is imperfect or if air enters the pericardium through adhesions and perforation between it and the œsophagus, lungs, stomach or intestines.

Tubercular inflammations of the pericardium are similar to those of the pleura. They may be associated with serous or fibrinous exudation. The tubercular nodules are small and are usually found scattered along the course of the cardiac vessels.

Tuberculosis of the pericardium is due to infection from caseous mediastinal lymph glands, or from the pleura or lungs. It may occur with infection of the pleura and peritoneum in general infection of the serous membranes. According to Osler there are two classes of cases. One in which there are firm adhesions with great thickening of the pericardium, and one in which there is recent exudation of fibrinous, sero-fibrinous, hæmorrhagic or purulent material. The former is the most frequent.

Hæmorrhagic pericarditis as a type of inflammation is rare. Large numbers of red blood corpuscles may escape with the exudate or newly formed vessels may rupture, giving a hæmorrhagic character to any exudation. In purpura,

scurvy, tuberculosis or malignant disease, however, there may be sufficient escape of blood to constitute a hæmorrhagic type of inflammation.

Carcinoma and sarcoma of the pericardium are rare and occur only as secondary to contiguous disease of like nature.

One of the most important features of pericardial inflammations is their effect on the heart itself.

Every pericardial inflammation of any severity is probably accompanied by more or less myocarditis involving the immediately adjacent muscular tissues which may be infiltrated by small cells. The fibres themselves may have undergone granular degeneration or coagulation necrosis. Fibroid induration of the heart may result from pericarditis, especially, according to Fagge, in association with syphilis accompanied by vascular lesions. When due to pericarditis the fibroid change is in the external portion of the walls of the heart and both ventricles are affected alike.

Enlargement of the heart is of frequent occurrence secondary to pericarditis, especially when there have been extensive adhesions of the pericardial surfaces. This enlargement has been attributed to the extra labor thrown on the heart by the adhesions interfering with its action and was supposed to occur independently of valvular lesion. (Chevers, Barlow, Hope.)

Some authorities claim that as a sequence of pericarditis cardiac enlargement does not occur independently of valvular lesion. (Stokes, Sibson, Balfour.)

All cases of adherent pericardium do not cause cardiac enlargement, nor are all cases of cardiac enlargement, which occur in connection with pericarditis, associated with valvular lesions. Broadbent's explanation of this fact is that the heart becomes dilated during an attack of pericarditis, from weakness of the heart muscle. Before it regains its usual condition pericardial adhesions develop which maintain it in an enlarged state. Hypertrophy then develops in compensation to the dilatation. In those cases where enlargement does not take place, contraction of the heart occurs before the adhesions form. Adherent pericardium may be

associated with mediastinitis of varying degree. According to Harris there are three classes of cases.

The first comprises adherent pericardium with fibrinous increase in the tissues of the mediastinum and adhesion of the external layer of the pericardium to surrounding tissues, with or without caseation of the mediastinal glands,—*indurative mediastino-pericarditis*.

The second class comprises adherent pericardium, adhesion of the external layer to surrounding parts. No general mediastinitis,—*pericarditis externa and interna*.

The third class comprises increase of fibrous tissue in the mediastinum, no adherent pericarditis internally,—*chronic mediastinitis*.

CLINICAL HISTORY.—The clinical history of pericarditis is indifferent as it is always mixed with the history of associated morbid conditions. There are three rational symptoms, however; pain in the præcordium, palpitation or cardiac arrhythmia and dyspnœa. The pain may or may not be severe, it may be confined to the cardiac region or may extend to the brachial plexus and down the left arm. Pressure on the liver against the diaphragm increases the pain. With the palpitation there is a sense of constriction and distress in the chest. Usually there is some cough. The dyspnœa depends largely on the amount of effusion. In cases of fibrinous exudation there is rapid and jerky respiration. If the effusion is large there may be orthopnœa.

The pulse will range from 100 to 130 in plastic pericarditis, and is strong and full. With effusion it becomes feeble or suppressed, but rapid.

In large effusions the pulse becomes irregular or intermittent and is markedly dicrotic; it is not in proportion to the action of the heart. The temperature usually rises to 100°—101°; in some cases it may go much higher.

In acute pericarditis the patient assumes a recumbent position, somewhat more toward the right than the left side. When there is much effusion the patient wishes to have the shoulders elevated and cannot lie down. The face will have an anxious, apprehensive expression. Syncope is apt to come on if the upright position be assumed. Pericardial pain, rapid irregular heart cough, and dyspnœa coming on,

during the course of rheumatism, nephritis or general or local tuberculosis should direct our attention towards the pericardium. When delirium occurs during an attack of acute rheumatism, or coma or convulsions during the course of nephritis, you should at once examine the heart. These symptoms are, in these connections, specially indicative of danger if the patient be a child.

While we may, by carefully noting the subjective signs of pericarditis, suspect its presence, it is only by careful physical examination that we are able to diagnose it.

SYMPTOMS AND DIAGNOSIS.—The symptoms of pericarditis will vary with the nature and extent of the inflammatory process.

Clinically we encounter three classes of cases.

The first class comprises the acute form with plastic exudation, including all cases from the "dry" pericarditis with little or no exudation, to those extensive fibrinous exudates which cause permanent thickening of the pericardium and may result in adherent pericardium.

The second class comprises all grades of effusion, serous, sero-fibrinous and purulent.

The third class comprises chronic pericarditis, or adherent pericardium.

Acute fibrinous pericarditis can never be more than suspected from the subjective signs, for the pain, disturbed cardiac action and dyspnoea might equally well apply to a localized pleurisy. Inspection and palpation will tell alike of rapid, forcible, irritable cardiac action which may be, but usually is not, irregular. Palpation may also determine a friction fremitus in exceptional instances. When present this is best felt at the base of the heart in the third or fourth space, from one-half to three-fourths of an inch to the left of the left sternal border.

The area of cardiac dullness remains unchanged unless modified by some concomitant condition of the heart itself, which is quite likely to be the case.

Auscultation gives us the most reliable sign of the disease,—the pericardial friction sound. This sound is not always present, nor is it constant in position or character in the individual case. Depending upon the fric-

tion of surfaces covered with exudation it is liable to change place or character, or disappear with change in the character of the exudation. It may be ephemeral in character, lasting only a few hours, especially in those cases where effusion follows rapidly upon a moderate fibrinous exudation. Again the friction sound may last for several days. Friction sounds may be well defined during life and autopsy may show no exudation. (Walsh: *Pericarditis sicca*.) Hayden doubts, though does not deny, the possibility of friction sound without exudation.

Friction sounds may be heard over any portion of the cardiac area, but are most often found at the base of the heart, about the junction of the fourth left rib with the sternum, or over the apex of the right ventricle, between the fifth and sixth ribs just inside the left parasternal line. In some cases they may be heard behind, slightly above, and inside of the angle of the left scapula, even though scarcely audible in front. (Sears.)

The friction sounds may be single or double, systolic or diastolic or both, or may be independent of the heart sounds. In character they are grazing, rubbing or creaking. They are harsh in quality and the superficial origin of the sound is sometimes quite apparent, and again it is not easily determined. Pericardial friction sounds are louder when the patient is leaning forwards, or is in the recumbent position, than when standing or sitting. Friction sounds at the base may be louder at the end of a full inspiration, while those at the apex may be louder at the end of a complete expiration. Pleuritic friction sounds over the pericardium will cease with cessation of respiration. The so-called pleuro-pericardial friction sounds may continue during cessation of respiration; they have a fixed area of maximum intensity, while pericardial sounds are variable in this respect.

In like manner the intensity of exo-pericardial murmurs is the more constant. The location of pleuro-pericardial sounds is at the border of the pericardium and they may be transmitted beyond the border, while pericardial sounds alone are confined to the cardiac area.

Walsh mentions a murmur from pulsation of the aorta

against the pleura; it is diastolic in rhythm and is increased by a full inspiration.

We have here a patient exhibiting the usual features of a case of pericarditis with moderate fibrinous exudation. The history is briefly as follows:

Female, age 17. Three months ago had an attack of acute rheumatism involving ankles and left hand. Was treated by family physician. Rheumatism disappeared. Six weeks ago had another slight attack which also responded to treatment. Two weeks ago rheumatism returned in left hand only. She was weak and had disturbed heart's action. For the last four or five days has had pain in cardiac region, palpitation and slight dyspnoea on exertion. Her temperature is 100.5° F. Pulse 120, slightly remittent, quick, jerky and irritable. You notice that there is increased force and slightly increased area of apex impulse; a forcible, jerky motion which increases decidedly with slight exertion or excitement. On auscultation you hear at the base of the heart a to-and-fro sound rather harsh in character, short in time, the systolic part of the sound being longer and more distinct than the diastolic. The sounds are synchronous with the heart sounds. They have a distinctly superficial character and are increased by leaning the patient forward. They are not so loud when the patient lies down. They are not heard behind. At the apex there is a murmur indicative of mitral stenosis which illustrates the frequent association of pericardial and endocardial inflammations already mentioned. In differentiating the endocardial from the pericardial sound in this case we note that the pericardial sound is superficial in character and rendered more so by a change in the position of the patient. It is double and not necessarily synchronous with the heart sounds. It has a limited area of diffusion and no special direction of transmission.

Pericarditis with Effusion.—In our second clinical division we include all cases showing effusion into the pericardial sac. Whether the fluid is purulent or not cannot always be told from the symptoms. It may be suspected from the etiological relations that the effusion is purulent, but it can only be proven by inspection of the fluid.

The symptoms of effusion into the pericardial sac will vary with the amount of the effusion. Small effusions are difficult or impossible to make out and even in large effu-

sions the diagnosis may, at times, present many difficulties. The question of surgical treatment renders the diagnosis of pericardial effusion doubly important. Special signs are given as diagnostic of small effusions, such as dullness in the right fifth interspace, the contrary condition—resonance in this situation—being indicative of the absence of effusion. (Rotch). The diagnosis of a small effusion is always a matter of doubt. The practical necessity is for us to be able to diagnose effusions which are large enough to give reliable symptoms, and which are apt to be dangerous, and that present the necessity for interference. Large effusions in uncomplicated cases can usually be diagnosed without much difficulty. In cases of considerable effusion inspection will show a loss of respiratory motion over the præcordium. There may be some extra prominence or bulging of the præcordial region in young children. The area of cardiac motion is indistinct and the apex beat cannot be seen. So far as inspection is concerned we may only surmise the nature of the trouble. By palpation we may feel a wavy, undulating motion in large effusions; the impulse of the heart against the chest wall will be very feeble compared with its apparent effort. The apex beat is raised and carried to the left. The character of the impulse gives the sensation of imperfect contact with the chest wall. The elevation of the apex beat is due to a forcing of the apex away from the chest wall and bringing the side of the ventricle into contact with the chest.

Percussion will furnish us the most decisive evidence of effusion. The modification of the normal area of cardiac dullness will vary with the condition of the heart, lungs and pleura. If there is no special resistance to distension of the pericardial sac the effusion will distend it in all directions, with, perhaps, somewhat greater increase in the lateral dimensions than in the vertical. This is more apparent at the level of the fifth or sixth ribs than above. The outline of flatness is said to be a blunt cone extending from the first or second rib to the sixth or seventh, and from one inch or more to the right of the right sternal border to a varying distance to the left of the left mammillary line.

Various observers differ somewhat in regard to the area

of flatness. Rotch claimed to have demonstrated by injections into the pericardial sac a much greater increase in the lateral diameter of the flatness than in the vertical. Bruen thinks that clinically we do not find great disproportion between the lateral and vertical increase in flatness. Shattuck believes that the flatness increases nearly equally in all directions. I believe that Rotch places too much stress upon the increase in the lateral area of dullness, and that practically the general increase in flatness in all directions is the important point to demonstrate.

Two very important points are the relation of the left line of dullness to the apparent apex beat; and the abrupt transition from flatness to pulmonary resonance at the left border of the area of flatness.

The extension of dullness beyond the apex beat is a most indicative sign of pericardial effusion.

The extension of dullness below the apparent apex beat is of the utmost importance in differentiating cardiac enlargement from effusion.

A distinctly pyramidal or triangular form of dullness is due to the nature of the displacement of the edges of the lung, and not to the shape of the pericardial sac.

Variations in the area of dullness from day to day caused by a varying amount of effusion is important, as is also variations in the outline of dullness upon change in position of the patient while the apex maintains the same relative position to the chest wall. The difference in the sense of resistance offered to the fingers as a pleximeter over the effusion and over the heart itself is important.

Ewart gives the following signs as the most important in an effusion large enough to bring up the question of surgical interference: Considerable increase in the total area of dullness, as shown by the lateral boundaries; great increase in the area of absolute dullness; absolute dullness over sternum; depression of the liver; dullness in the right fifth inter-cartilaginous space (Rotch's sign); alteration in the lower angles of dullness as distinguishing pericardial effusion from cardiac dilatation—the right lower angle projects obliquely towards the right in effusion—the left lower angle of dullness is a prominent angle in effusion and the

apex beat is heard inside and above this angle; ability to feel the upper edge of the first rib as far as its sternal attachment, probably due to raising of the clavicle and relaxation of the sterno-costal ligament (this sign may possibly be found in some cases of cardiac enlargement); a posterior patch of dullness at the base of the left lung extending from the spine outwards about as far as the line of the angle of the scapula, with an abrupt vertical outer boundary, (this dullness may extend as high as the level of the ninth or tenth rib, and this boundary is also abrupt); an area of tubular breathing below the right mamma in the nipple line a little above the hepatic line, (this tubular breathing may be restricted to expiration and is not constant); a posterior patch of tubular breathing and egophony about two inches in diameter immediately below or slightly to the left of the tip of the left scapula; secondary pleural effusions; a large, slapping pulse much resembling the pulse of aortic regurgitation.

The posterior patch of dullness with abrupt boundaries is a valuable sign, as it is not apt to occur in other conditions than pericardial effusion. The posterior patch of tubular breathing and egophony may be present frequently in pleurisy.

Tubular breathing beneath the right mamma is in my experience very inconstant. I have never been able to determine the first rib sign with any certainty.

Mediastinal tumors, pleurisy localized in the pericardial area and cardiac dilatation, are most likely to confuse us in making a diagnosis. The clinical history of these conditions differs from that of effusion.

Tumors have an irregular outline of dullness. Localized pleurisy will not present the angles of dullness of a pericardial effusion, nor will there be such abrupt transition from dullness to lung resonance. In cardiac dilatation the lesser degree of absolute dullness, the absence of dullness in the fifth right inter-cartilaginous space, the more gradual shading of dullness into resonance and the identity of the apex beat with the lower left angle of dullness will usually enable us to decide the question when taken in connection

with the history and other evidences of chronic cardiac disease. The following case illustrates these points:

Man aged 25; seen in consultation. Had had periodical attacks of rheumatism for several years. Ailing for several months. Present attack began five weeks ago with pain in region of heart and cardiac disturbance. In bed for last two weeks. Much worse in last three days. Area of cardiac dullness increased so much during last five days that attending physician suspected pericardial effusion. Percussion showed upper border of dullness at upper border of third rib; right border of dullness at level of fourth rib, one-half inch to right of right sternal border; left border of dullness one inch outside of left mammillary line at level of fourth rib. Apex below seventh rib one-inch outside mammillary line. There was marked aortic regurgitation with relative mitral regurgitation murmurs. Intensification of second pulmonic sound, Corrigan pulse. The dullness did not extend beyond or below the position of the apex beat, the latter fixing the lower left angle of dullness. No dullness in right fifth space. Left border of dullness was not abrupt.

Diagnosis: Hypertrophic dilatation of left side from aortic regurgitation. Secondary mitral regurgitation. Dilatation of right ventricle.

Death four days afterward.

In this case close observation would undoubtedly have shown that the rapid increase in the area of dullness was coincident with the development of increased pressure on the pulmonary valve and the signs of right ventricular failure.

Chronic Adhesive Pericarditis.—This variety of pericardial inflammation is more frequent than is generally supposed.

Broadbent found thirty-one cases of adherent pericardium in eighty-six cases of death from heart disease.

The diagnosis is difficult and often impossible, the symptoms not being in any way characteristic; they simply pertain to enlargement of the heart, cardiac failure in general and right ventricular failure in particular. There may be dyspnoea, tenderness over the liver, vomiting, oedema, ascites, pain over the præcordial area or irregular heart's action; all pertaining to cardiac failure.

The pulse may be irregular. The *pulsus inspirations intermittens*, (*pulsus paradoxus*) has generally been considered

as indicative of pericarditis. Kussmaul believes it is of diagnostic importance in indurated mediastino-pericarditis, and is due to fibrous cords dragging on the aorta during inspiration.

This form of pulse is characterized by disappearance of the radial pulse during inspiration. Kussmaul regarded this pulse, together with simultaneous swelling of the great veins of the neck, as characteristic of pericarditis with adhesions.

The pulsus paradoxus may occur in the absence of intrathoracic disease. (Summerbrodt). It is to be regarded as a sign of mediastinal disease and is not characteristic of pericarditis. (Harris).

Systolic depression of the third, fourth or fifth interspaces was regarded by Skoda as characteristic of adherent pericardium. It has been found, however, in cases where no adhesions were present (Friedreich, Traube), and may occur where the heart is considerably enlarged and the anterior border of the lung displaced, where the lung is adherent to the parietal pleura or where the lung is indurated or collapsed. It is to be regarded as a valuable sign of adherent pericardium where other causes for the recession can be excluded. Systolic retraction of the lateral or posterior portion of the thoracic walls, generally only on the left side though occasionally on the right, is a reliable sign when obtained. It is due to traction of an adherent pericardium on the diaphragmatic attachments.

If the pericardium is adherent to the chest wall and the diaphragm there is interference with the descent of the diaphragm, as shown by the loss of motion of the upper abdominal wall in the left sub-costal angle.

Systolic recession of the site of the apex beat may be an important sign but may be present in other conditions. I have observed systolic recession of the site of the apex beat in several cases of valvular disease where it was improbable that there were adhesions.

The position of the apex beat may be changed by adhesions, or the apex beat may be fixed in a certain position and remain unchanged by any position of the patient or by inspiration or expiration—a most important sign.

A diastolic shock may be felt with the flat of the hand over the cardiac region.

There is nothing characteristic about the heart sounds. There may be reduplication of the second sound at the base, and the pulmonic second sound may or may not be accentuated, according as there is, or is not, increased tension in the pulmonary system.

Broadbent points out that a weak pulmonary second sound with an enlarged right ventricle must be regarded as presumptive evidence of pericardial adhesions. He lays stress on the importance of right ventricular failure when the physical signs are apparently not definite enough to account for such a condition. The right ventricular wall being thinner suffers more from the effects of pericardial disease than the left.

The following history illustrates the ordinary conditions of adherent pericardium:

Man, aged 43. Rheumatic history. Came under observation for cardiac disturbance. Examination showed aortic regurgitation with consecutive hypertrophic dilatation of left ventricle. There appeared to be more enlargement of the right ventricle than could be accounted for at this time because of the aortic lesion, as backward pressure through the mitral opening had not yet occurred. There was systolic retraction in the fifth space one and one-half inches from the sternal border and systolic recession of the site of the apex beat one and one-half inches farther to the left in the sixth space. There were no other signs of adherent pericardium.

Considerable improvement under treatment. About two years afterward cardiac disturbance more marked. Mitral regurgitant murmur. Extensive dilatation of right ventricle. Dropsy. Purpuric eruptions over trunk and lower limbs. Death.

Autopsy showed incompetent aortic valve, hypertrophic dilatation of left ventricle, marked enlargement of right ventricle with greater degree of hypertrophy than usually occurs when the right ventricle fails secondarily to left side failure.

The pericardium was everywhere adherent to the heart and the covering of the heart was torn in separating the parietal layer from the heart.

TREATMENT.—The therapeutic management of pericarditis must be instituted with a thorough appreciation of its secondary nature. In some cases you will regard the occurrence of pericarditis as an accident merely, in the course of some disease which is to be managed with as little departure from the therapeutic measures already in use as possible. Again the activity of the process may make it the dominant feature of the case for the time being.

In acute pericarditis with plastic exudation, various means have been recommended with a view of limiting the amount of exudation and the liability of effusion, also the formation of adhesions. Antiphlogistic measures have generally been abandoned as unsuited to a secondary affection. Leeches and blisters over the præcordium are still recommended by some. In sthenic cases bleeding may have some beneficial effect, but this can also be gained by milder measures.

I have never been satisfied of the good effect of blisters in limiting the exudation, as claimed by some observers. They annoy the patient and disturb the heart's action and I do not like to place even small blisters over the præcordium.

Ice bags or coils to the præcordium will certainly give relief in many cases. Personally I have preferred the use of hot applications, especially in children in whom there is less danger of depression following the shock of hot than cold applications to the chest wall. Frequent, one-half-grain doses of calomel, combined with a little opium, are recommended to limit the extent of the exudation. I have never seen any evidence to convince me that calomel had this effect.

It is claimed that large doses of salicylate of soda will limit the extent and severity of the inflammation. While this is a difficult matter to decide, I do not see any evidence in the statistics available which proves this point, and my personal experience is against it.

The management of an attack of acute plastic pericarditis should be about as follows: If there is pain, hot applications to the præcordium. With a rapid, full pulse, fifteen grains of sodium bromide, with one or two drops of tincture of aconite, every four hours to quiet the circulation. Abso-

lute rest in bed and isolation from all disturbing influences. Morphia or codeine should be used to quiet severe pain and restlessness; opium should be used with care however. Chloral, chloralamid, trional and similar drugs are unreliable and unsatisfactory. Moderate cholagogue catharsis should be maintained.

Pericarditis occurring with rheumatism or Bright's disease emphasizes the necessity of bringing these diseases more quickly and fully under the influence of therapeutic measures.

The Treatment of Pericardial Effusions.—The medicinal treatment of effusions is not effective. The use of diuretics, diaphoretics and cathartics is of little or no avail in removing effusions. When the effusion is sufficient to cause dangerous symptoms it is not safe to waste time on such measures. Stimulant and supportive treatment is of course indicated.

The first question is—Shall we interfere with a pericardial effusion? In deciding this we must first consider the primary cause. The well known tendency of rheumatic effusions to subside, even more quickly than they appear, will at times justify a delay that would be dangerous under other circumstances. In general, dyspnoea, tumultuous heart's action, irregular, feeble, dicrotic pulse, may be taken as sufficient warrant for puncture, especially in relation to pneumonia and nephritis as primary causes. I have, however, seen these symptoms well marked in rheumatic effusion, and while holding myself ready to puncture have had the effusion diminish within twelve hours sufficiently to render the patient quite comfortable. When the effusion reaches sufficient size to cause such symptoms, and the border of dullness remains the same for twelve or twenty-four hours, puncture is indicated.

The simplest instrument is the best for puncture. For serous effusions an ordinary aspirating needle may be used. If the effusion is large there is little danger of injury to the heart if the needle is handled carefully. A needle with a sliding point is best. A small trocar and canula attached to a rubber tube may be used as a siphon, or Pepper's double canula may be used. Roberts uses a trocar protected by a flexible tube.

The point for puncture is a matter for selection in every case. Successful puncture has been made in various situations. Roberts says to tap in the fossa between the ensiform cartilage and the costal cartilage on the left side; or in the fifth left interspace near the juncture of the sixth rib with its cartilage, or from two to two-and-a-quarter inches from the left border of the sternum. He favors the latter point most.

We must remember the internal mammary artery which descends to the lower border of the sixth costal cartilage. It is situated about four or five millimetres from the border of the sternum (Cruveilhier, Sappey), or according to Roberts about six to twelve millimetres from the sternal border. From the point of bifurcation the superior epigastric artery continues outward and downward in the sixth space.

Rotch advises puncture in the fifth right interspace at the sternal border. Shattuck has made his most successful punctures just inside of the left lateral border of dullness from one to two inches outside of the nipple line. He strongly favors the apex of the left costo-xiphoid angle for puncture. At whichever point selected the instrument should be entered slowly and the vacuum turned on as soon as the needle is well engaged in the tissues, as the first intimation of the needle being in the sac may be the presence of fluid in the tube. There is no danger of removing too much fluid, but it is not wise to change the position of the needle point too often in hope of getting more.

The removal of a small portion of a serous effusion will contribute greatly to the comfort of the patient and facilitate the absorption of the remaining fluid.

My own preference in regard to the particular place to puncture is in the fifth interspace two inches from the left sternal border. In some cases of large effusion I would be in favor of the costo-xiphoid space, though I have never tapped in this situation. For purulent effusion continuous siphonage is possible but more uncertain than in purulent pleurisy. Free incision of the pericardial sac with or without drainage, should be made. The necessity of drain-

age will depend on the nature of the case; it does not appear to be necessary in all instances.

Irrigation of the sac is not advisable except in selected cases. Porter has shown by dissections that the point for incision is in the fifth left interspace at the sternal border.

The treatment of adherent pericardium resolves itself into maintaining the integrity of the heart, sustaining the general nutrition and teaching the patient his individual limitations relative to exercise, excitement and all disturbing influences; in other words the usual management of an incompetent heart.

1. The most recent experimental study indicates that the evil effects of chloroform result from vasomotor paralysis, causing the accumulation of blood in the abdominal viscera especially, and bringing about partial or complete cessation of function in the nervous centres from acute anæmia.

2. Pregnancy increases vasomotor tension, and thereby renders the pregnant woman less liable to the injurious effects of chloroform.

3. In normal labor, the actual expulsion of the child may be safely rendered painless, dilatation of the birth-canal furthered, and laceration diminished, by light and transient narcosis from chloroform.

4. In tetanus of the uterus, eclamptic convulsions, and maniacal labor, chloroform is to be preferred to ether, and is most useful.

5. Profound narcosis from chloroform is seldom, if ever, necessary in obstetric practice, and like this condition under ether, is attended with risk.—E. P. Davis, M. D., *Bos. Med. & Surg. Jour.*, Aug. 26.

REMARKS ON CLINICAL CASES.—INTRACRANIAL
HÆMORRHAGE: DISSEMINATED SCLEROSIS:
HYDROCEPHALUS. By U. O. B. Wingate,
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INTRACRANIAL HÆMORRHAGE: —The first case I have to show you today is one of intracranial hæmorrhage of the right side producing, as you see, paralysis of the left side.

This lady is forty-six years of age; married, and the mother of ten children, the youngest of whom is thirteen years old. Her family history is good. Five years ago she had la grippe. One year later, or four years ago, she had a "shock;" was unconscious for a time and found to be completely paralyzed, so far as motion was concerned, on the left side. The face was not involved. There were no sensory symptoms then and none have developed since. She is reported to have been in bed for some time, but gradually became able to sit up in a chair, as you see her to-day, but in other respects has not improved. She has been under good treatment at home. Has been in this hospital for over a year but with no improvement; indeed rather losing ground.

Her monthly and other functions are normal. Except for this motor paralysis she only complains of a tired feeling, probably due to her constant fixed position, and, of late, some irritability of the bladder, which I am inclined to attribute to a functional nervous origin as she is disposed to be somewhat hysterical.

You will observe that there is no wasting of the muscles of the paralyzed side, but there is marked contracture in

the left arm, which probably came on late, though of this I am not informed.

These cases always present some interesting features:

First, as to etiology. It is claimed by some authors that these cases of intracranial hæmorrhage, or apoplexy, as they were formerly termed, occur most frequently between the ages of thirty-one and fifty years. If this be true our patient comes within that period, she having been forty-two at the time of the attack.

It has been claimed by some observers that when the intracranial hæmorrhage occurs at about forty, or before specific disease should be thought of as a probable cause, but in this case there is not any history or indication of such disease. We certainly can exclude any senile degeneration in the arteries at this age, but we do not know to what extent the attack of *la grippe* may have affected them by reducing the system and thereby acting indirectly as a cause. We know this disease often leaves the system in an exceedingly bad condition. Then we have the history of a fright, in this case, which I have not spoken of before, as it would not have affected her had she been well, but suffering from the effects of *la grippe* as she was, I doubt not that the fright as an exciting cause, taken together with her illness or its effects, and her age, may have been sufficient to have caused the hæmorrhage.

Second, as to diagnosis. This patient is free from any renal or cardiac disease. The suddenness of the attack in the absence of pathologic conditions would exclude embolism, often very difficult, if not impossible, to differentiate from hæmorrhage, and would indicate almost to a certainty that a clot must have been formed very rapidly, and the subsequent history would indicate that in all probability the clot has become encysted.

Where is the lesion in the brain located?

We know that the most frequent location for such lesions is in the internal capsule just around the genu in the anterior portion. Remember that at this location the motor fibres come down from the hemispheres and enter the internal capsule but the sensory enter back of, or posteriorly, to the genu. There may be cases where the paralysis is

the same side as the lesion, in cases of non-decussation of the motor fibres, as pointed out by Brown-Sequard, but such cases are rare, and in such cases the lower part of the face is involved, and usually the speech is affected, especially when the left side of the brain is the seat of the lesion, as it will be remembered that in right-handed persons, at least, the speech center is on the left side.

With freedom from cardiac or other disease that might cause embolism, sudden onset of attack, a left hemiplegia, without facial or sensory symptoms, an absence of speech defect, I believe we can be pretty positive that the lesion is located in the internal capsule anterior to the genu.

The patient being removed let us now consider,—

Third, as to prognosis. There is but a word or two to say in this relation. The length of time that has elapsed since the attack without improvement, together with contracture, indicates that no treatment can be expected to do anything toward a cure, and we may at any time expect complications, such as bed sores, pneumonia, and a general decline that will predispose the patient to various ailments that may prove fatal.

Fourth, as to treatment. Although we cannot expect to do anything looking toward a cure, we should never abandon the patient with the remark that we can do nothing. Few cases indeed will we meet for whom we cannot do much to comfort if there is no hope of recovery, and unworthy is he of the title of physician who declines to comfort those who are incurable. In the case before us massage, skillfully applied, will relieve the tired feeling, rest the patient, and afford much comfort. Bed sores should be prevented, if possible, by changing position, and relieving pressure on any one spot, and if they occur they should be carefully dressed and looked after. The most careful and patient nursing should be maintained, and symptoms or diseases should be met, as they may arise, in the most rational manner. For the irritable bladder, of which she is complaining, small doses of atropine in solution are administered.

DISSEMINATED SCLEROSIS.—The second case we have

to show you presents some points of interest from a diagnostic point of view. This lady is about sixty years of age, and has been in this hospital for nearly two years. I am unable to learn, with any degree of accuracy, how long she has been afflicted, but probably for some time, and she is much the same now as when she came here. She states that a number of years ago she was greatly exposed to the cold and "froze her eye." You will observe that she has a cataract of one eye, but how much her exposure to the cold had to do with it I am unable to say. It is very probable, however, that the exposure did play a part in the causation of the trouble. You will observe her sitting in her chair trying to sew, and this is about all she can do. She cannot walk on account of the marked inco-ordination of the lower extremities. On any attempt to move the legs they fly about in the most unruly manner and she cannot manage them at all. Then you will observe that when she attempts to carry a glass of water to her mouth, there is a very characteristic intention tremor, and it is with great difficulty, and after repeated attempts, that she succeeds. Then you will observe her speech; on attempting to talk there is the same inco-ordination of the muscles of articulation as is observed in other attempts of muscular action. It will be observed that these exaggerated muscular movements are only present when the patient attempts to move; when she sits still there is no tremor. There is absence of knee-jerk, and I fail to get any nystagmus. This is unusual except in advanced stages of the disease. In the early stages exaggerated knee-jerk is the rule, and nystagmus is a common symptom. There is no atrophy of any muscles; no hyperæsthesia or anæsthesia; in fact no sensory symptoms anywhere. She makes no complaint; eats and sleeps well; and her disease appears to be in a non-progressive stage. With the exception of nystagmus, and exaggerated knee-jerk, we have a typical picture of disseminated sclerosis, and we know that these symptoms, especially the latter, may be absent in cases where the inco-ordination is as marked as in this case.

This disease may occur at almost any age, though the most common age is claimed to be from twenty to thirty-five

years. Exposure to cold is reported to be a prominent element in the causation of this unfortunate affection. Many other causes may be named; emotional excitement, heredity, trauma, and febrile diseases, and of late infection is being held in a conspicuous light as a factor in the causation of this malady. It occurs more frequently among females than among males. It may run quite a rapid course and end the patient's life, or it may last for years, as it has in this case, remaining for an indefinite period without any advancement.

At the present time, I am sorry to say the prognosis in this case is hopeless, and hence the only treatment we can apply is palliative. In the case of this patient no treatment is being administered at the present time, as none seems to be indicated. Sometimes the bromides may be of use to quiet the tremor and other discomforting symptoms when they are present; also hyoscyamine in doses of $\frac{1}{16}$ of a grain, or the two may be given together. No other treatment has, as yet, promised to be of any value.

HYDROCEPHALUS.—The next two cases we have to show you are of interest, as it is not common to see children of their condition live to attain their ages and enjoy the comparatively good health that they do. These children



Boy.



Girl.

are victims of *hydrocephalus congenitus*. This boy is thirteen

years of age and his head measures twenty-eight inches in circumference and is continually increasing. The girl is eleven years of age and her head measures twenty-eight inches in circumference and is also increasing. The girl enjoys better health than the boy. There is nothing in the family history of these two children that would seem to have any influence to cause this condition. The father of the boy is still alive and is in good health. The mother died a few years ago from a complicated liver trouble; there might have been malignant disease. In the case of the girl, both parents are alive and well, and there is also a large family of brothers and sisters, all of them well. The condition of these children dates back to their birth.

The real cause of chronic hydrocephalus is unknown. The accumulation of fluid in these cases may be external or in the sub-dural space, or internal when it is within the ventricles. The former is usually of the senile variety and the latter is of the variety we see here. Probably in these cases all of the ventricles are involved. Sometimes these conditions appear in the foetus in utero, and the skull has to be punctured before birth that the delivery of the head may be accomplished. I had such a case a few years ago. It was a twin birth. One child was born, the other was very hydrocephalic and it became necessary to puncture the skull, when a prodigious amount of water was evacuated before the head could be delivered. Of course the child was born dead. The parents in this case were both very healthy and no history of disease of any kind could be obtained that would give us any information as to the cause of this peculiar malady. Uterine disease, grief, etc., have been ascribed as causes. Gowers mentions that it is liable to run in families.

A measurement of the heads of these two children shows them to be large, but not as large as have been reported. They are increasing, however, and may assume a size as large as yet reported. Many of these cases die young, long before attaining the ages of these cases before us, and some live to grow up to manhood and womanhood, and old age may be attained in exceptional instances.

It is interesting to note how much fluid can be borne in

the ventricles in these cases. It comes on gradually and the brain seems to become accustomed to it, while if it should come on suddenly, as a hæmorrhage, the results would be disastrous. We notice this tolerance of fluid that accumulates gradually in other parts of the system, as for instance, in ovarian tumor. In some cases an enormous amount of fluid accumulates gradually without any serious results, which could not be borne if it came on rapidly. The parts affected adapt themselves to the change by degrees and thus bear an enormous amount of fluid without any immediate serious results.

This boy is very emotional and nervous. He is unable to walk or even stand. The lower extremities are very much atrophied, as you will notice, also the arms, and he has no motion, or but very slight, in the left arm or in the legs. There is marked contracture, as you will observe, in the left wrist and also of one of the ankles. He has no control over the bladder or rectal muscles, and it requires much work to care for him, although he eats and sleeps fairly well and is pretty comfortable most of the time. He is unable to feed himself, and the mind is weak. In some cases we observe idiocy, but in these two children there is a moderate amount of intelligence.

The girl is stronger both mentally and physically than the boy, although she is unable to walk. She can stand, and there is no atrophy of the muscles, either in the legs or arms, and she is able to feed herself, and the sphincter muscles are competent to perform their functions.

It seems unnecessary to say anything about the diagnosis in these cases, as the malady could not be mistaken for anything else. In some less-marked examples, however, rickets and thickening of the cranial bones may be mistaken for it. In rickets the head is of somewhat square shape and not globular as in hydrocephalus. The other symptoms of rickets are present to a marked degree.

The prognosis is always grave in any form, and unless the occurrence of an arrest of process can be recognized, it is uncertain.

Treatment is practically *nil*. I have never seen a case even relieved. It has been recommended to puncture the

lateral ventricle but the method is sometimes fatal in its results and it has never been of much use. Puncture of the spinal membrane has been resorted to, and although this is harmless, it is also considered valueless, so that all we can do in these cases, or all that seems warrantable, is to keep them as comfortable as possible and treat symptoms, and other diseases, as they may arise. Under such a course they may live for many years to come.

204 Biddle St.

“Linacre, the type of the literary physician, must ever hold a unique position in the annals of our profession. To him was due in great measure the revival of Greek thought in the sixteenth century in England, and in the last Harveian Oration Dr. Payne has pointed out his importance as a forerunner of Harvey. He made Greek methods available; through him the art of Hippocrates and the science of Galen became once more the subject of careful, first-hand study. Linacre, as Dr. Payne remarks, “was possessed from his youth till his death by the enthusiasm of learning. He was an idealist, devoted to objects which the world thought of little use.” Painstaking, accurate, critical, hypocritical, perhaps, he remains to-day the chief literary representative of British medicine. Neither in Britain nor in Great Britain have we maintained the place in the world of letters created for us by Linacre’s noble start. It is true that in no generation since has the profession lacked a man who might stand unabashed in the temple at Delos; but judged by the fruits of learning, scholars of his type have been more common in France and Germany. Nor is it to our credit that so little provision is made for the encouragement of these studies. For years the reputation of Great Britain was sustained almost alone by the great Deeside scholar, the surgeon of Banchory, Francis Adams, the interpreter of Hippocrates to English students. In this century he and Greenhill have well maintained the traditions of Linacre. Their work, and that of a few of our contemporaries, among whom Ogle must be specially mentioned, has kept us in touch with the ancients. But by the neglect of the study of the humanities, which has been far too general, the profession loses a very precious quality.”—Osler.

NERVOUS DYSPEPSIA.—By Henry M. Lyman,
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Nervous dyspepsia is a term that is employed to designate those disturbances of digestion in which nervous disorder furnishes the most conspicuous group of symptoms. In mild cases of purely functional perversion, nervous phenomena are alone exhibited; but usually these are complicated with conditions and symptoms indicative of the fact that in the alimentary canal, as elsewhere, derangement of the nervous apparatus cannot long continue without producing more serious departure from the healthy standard of structure and function, culminating in inflammation, ulceration, atrophy, or degeneration of the affected organs.

Chief among the causes of nervous dyspepsia must be reckoned those peculiarities of bodily structure that constitute the nervous type of organization. These are often inherited, and are usually congenital, though they may occur later in life as a result of gradual degeneration of the tissues, through misuse, overwork, defective nutrition, or an unfavorable environment. Improper feeding, the abuse of alcohol, tea, coffee and tobacco, insufficient exercise, and lack of sleep are common causes of digestive disorder, especially when they are accompanied by physical causes of depressing character, such as grief, care, anxiety and inordinate mental activity of every kind. In the same category should be placed all forms of sexual excess, since they imply an immoderate dispensation of nervous force, exhausting a large share of the reserve that should be employed in maintaining and regulating the digestive and other processes upon which healthy function throughout the body is dependent. It is in certain chronic diseases that nervous dyspepsia is conspicuously manifested in a periodical or paroxysmal form, as in the gastro-intestinal crises of tabes

dorsalis, and in the course of hysteria. In such cases the patient may be quite well, so far as digestion is concerned, during the intervals between the attacks. But in the majority of patients, nervous disturbances cannot long exist without transgression of the limit between functional and organic disease; consequently, the symptoms of gastric inflammation become increasingly prominent, and the case finally assumes the ordinary features of gastro-intestinal catarrh complicated with nervous disturbances of more than usual severity.

From these facts it is evident that nervous dyspepsia must exhibit a great variety of forms and degrees of severity. Each case must present special symptoms, rendering it necessary to individualize, and to analyze every example that is brought before the physician. For the sake of convenience, we may divide the cases into those which are of moderate severity, and those which are of great gravity so far as health is concerned. The serious cases may be again divided into two classes, of which the first is characterized by deficiency of free hydrochloric acid in the gastric juice, while the second is marked by an excess of the free acid. We have, then, three principal classes:—

- I. Simple nervous dyspepsia.
- II. Severe nervous dyspepsia, with lack of free hydrochloric acid.
- III. Severe nervous dyspepsia, with excess of free hydrochloric acid.

This classification is purely artificial, and invites the recognition of numerous sub-varieties. It should be regarded as a mere convenience for the sake of description, rather than a precise representation of universal uniformity of symptoms.

I. *Simple Nervous Dyspepsia*.—This form of the disorder is encountered among patients in whom the nervous temperament is predominant. Many of them are also prone to the diseases characteristic of the gouty predisposition. Such people, sooner or later, suffer with gout or rheumatism in their masked forms, or with obesity, diabetes, polyuria, asthma, chronic bronchitis, palpitation and irregularity of the heart, varicose veins, hæmorrhoids, arterio-scler-

osis, gall stones, gravel, chronic nephritis, dandruff, eczema, baldness, premature whitening of the hair, and neuralgia. Nervous dyspepsia frequently alternates with muscular and nervous rheumatism; it is a common cause of neurasthenia. Still, the general health of the patient will not materially suffer if intestinal digestion be not seriously impaired. The patient usually looks well, even though he complains of epigastric uneasiness, and eructates tasteless and odorless gas after eating. The pain that follows a meal is not severe, nor is it definitely circumscribed—it is a dull, vague sensation of distress in the region below the heart and the diaphragm. Sometimes there is a feeling “as if the breath would not go down.” There may be vertigo; and occasionally the temporal arteries beat violently; the head aches, the countenance flushes, and it may be impossible to lean forward without severe pain in one or both sides of the head. Sometimes it is in the back of the head that a feeling of pressure is experienced; the bowels are almost always constipated, and hemorrhoids are often developed. Depression of spirits is a universal consequence of this state of things.

Gaseous distension of the bowels is usually frequent; but the symptoms of dilation of the stomach do not exist without organic obstruction of some kind. Pressure over the abdominal walls excites very little pain, unless there be a rheumatic condition of their muscular structure.

II. *Nervous Dyspepsia with Reduction of the Quantity of Free Hydrochloric Acid in the Gastric Juice.* As a consequence of deficient and defective innervation of the gastric blood vessels and glands, the hydrochloric acid in the gastric juice may be diminished even to the vanishing point. In such cases the contents of the stomach are rendered very acid by the fermentations that should have been prevented by the presence of hydrochloric acid. The stomach, therefore, becomes painfully distended with gas; there are distressing eructations of acid fluids. Loss of appetite, and vomiting are not uncommon events. On shaking the body, splashing sounds are sometimes audible in the stomach. There is loss of flesh, and the skin acquires a sallow hue that would suggest the idea of cancer of the

stomach, were the symptoms less rapidly developed than in malignant disease.

III. *Nervous Dyspepsia with Excess of Hydrochloric Acid in the Gastric Juice.* This condition is not uncommon in cases of neurasthenia connected with a gouty predisposition. It is often encountered during the gastric crises of tabes dorsalis. It is the result of morbid excitement of the nervous apparatus connected with the gastric glands, together with reduction of inhibitory function in the same territory.

In typical cases pain begins in the epigastrium two or three hours after eating, and is usually far more severe than the epigastric uneasiness that follows soon after a meal in the other forms of dyspepsia. Sometimes there is intense pain and burning in the œsophagus and fauces; there is considerable thirst; sometimes vomiting follows the accumulation of acid liquids in the stomach. These sensations are relieved by food and drink—especially milk or alkaline waters. They begin when the stomach is empty, and are checked by each succeeding repast. In this way the latter part of the night is frequently rendered wakeful by epigastric pain, radiating throughout the abdomen and into the space between the shoulder-blades. Such patients feel badly in the morning until relieved by their breakfast; they frequently have a good appetite, and they instinctively prefer animal food because it is digested more easily than a vegetable diet. Usually there is gradual loss of flesh; the skin assumes an earthy hue; the patient is irritable, restless, easily fatigued, unable to sleep, and often exceedingly despondent. Sometimes the patient is tormented by repeated paroxysms of vomiting that persist for several days. They are often the result of intellectual exhaustion, and are the gastric expression of a cerebral disorder. They are usually relieved by evacuation of the excessively acid contents of the stomach, followed by the use of sodium bicarbonate, or other alkalies.

Accurate determination of these different forms of dyspepsia requires the aid of chemical analysis. Not merely the ordinary tests by color reaction, but a complete quantitative analysis is needful to determine the presence and

amount of hydrochloric acid in the gastric juice. Prognosis depends upon the intensity and duration of the symptoms. Mild and recent cases usually recover; but when the stomach is dilated, and when there is excessive secretion of hydrochloric acid, the prospect is less favorable. In severe cases there is a marked tendency to the establishment of permanent organic disease.

Treatment should minister (1) to the relief of pain, (2) to the correction of nervo-muscular disorder, and (3) to improvement of the gastro-duodenal and hepatic secretions.

Moderate degrees of pain may be relieved by the use of hot milk, or Horlick's malted milk. Severer paroxysms require ethereal preparations, such as the compound spirits of ether with aromatic spirits of ammonia, or, better still, the saturated aqueous solution of chloroform. Cocaine should be given with great caution in doses not exceeding half a grain. Where the pain comes on several hours after eating it can be relieved by five or ten grain doses each of bismuth salicylate, calcined magnesia, and sodium bicarbonate. In severe cases with dilatation of the stomach, the organ should be washed out with the gastric syphon. Copious draughts of hot water often afford considerable relief. Only in the severest cases should hypodermic injections of morphia be administered.

Inefficient muscular contractions in the walls of the alimentary canal requires the use of stimulant laxatives, like aloin and euonymin, cascara and rhubarb. Nux vomica and ipecac should be associated with these, especially if there be flatulence. In such cases benefit will be derived from the use of a few grains of benzosol before each meal. Cold drinks must be prohibited. Massage, electricity, and hydropathic treatment are especially valuable. At a later period of convalescence, all forms of active exercise in the open air should be encouraged. Careful search should be made for prolapsed conditions of internal abdominal and pelvic organs, so as to give surgical relief to all cases of tension and traction of visceral nerves.

When there is excessive secretion of hydrochloric acid in the gastric juice the danger of actual inflammation is always present. Alcoholic drinks and highly seasoned food

must be forbidden. The patient should be taught to eat slowly, and to masticate the food thoroughly. He instinctively prefers animal food, which should be furnished frequently in moderate quantity, chiefly in the form of tender stews, milk, eggs, meat powders, peptonized milk, and other delicate nitrogenous substances. Bread, dried and toasted, affords the best form of starchy food. As the case improves, asparagus, spinach, string beans and young peas may be cautiously allowed.

When without dilatation or stagnation there is a deficiency of hydrochloric acid in the gastric juice, ten or fifteen drops of the dilute acid may be given in a teacup of hot water after meals. The other mineral acids produce a similar good result. But it must be remembered that acids and pepsin and other digestive ferments are mere palliatives—they do not cure nervous dyspepsia. The nervous system is the real seat of the disease; and only when that is renovated by change of habits, mode of life, and occupation, can any permanent result be reached. Mental tranquility, financial ease, physical comfort, daily baths, and abundant exercise in the open air are more effectual than the most elaborate system of medication with drugs.

CLINICAL LECTURE ON OBSTETRICS AND GYNÆCOLOGY—METASTATIC ABSCESS FORMATION IN THE PUERPERIUM.—By Denslow Lewis, M. D., *Professor of Gynæcology in the Chicago Policlinic.*

Delivered in Cook County Hospital, Chicago. Stenographically reported by Bertha Barnet.

The tendency of infection is to extend. When occurring in consequence of traumatism of the vulva, vagina or portio vaginalis of the uterus, infection extends usually into the areolar tissue surrounding these parts, and the result is often an abscess in the subperitoneal cavity of the pelvis, which requires thorough evacuation and consistent and rational treatment, as I have already tried to explain. The phagocytic resistance is in a measure successful. The blood is not invaded. Systemic infection is prevented or is at best but insignificant in extent. The infection is practically limited, but may nevertheless prove of serious import in default of proper treatment.

What happens when the infection starts from the endometrium? There is here no areolar tissue into which extension may easily occur. There is a solid wall of muscle which of itself opposes invasion. How shall infection extend? Think for a minute. Remember the cylindrical epithelium that lines the tubes as well as the uterus. The epithelium in the tubes is ciliated, as we know, but it is essentially the same epithelium as is found within the uterus. How reasonable it is to assume that, in the absence of serious lesion of the uterine musculature, which occurs but rarely in comparison with the lesions of the lower portion of the parturient canal, the infection will extend preferably by continuity of epithelial surfaces. Such is the fact as shown by clinical observation. The extension occurs along the surface of the epithelium that lines and protects the parts. It extends from the endometrium to the interior of

one tube, or both. It may extend through the fimbriated extremity to the ovary. It may involve the peritoneum, but in this event it does not, as a rule, start up an infection of the entire peritoneum, for the proximity of the bladder, rectum, kinks of intestine and broad ligament favor agglutination which walls off the infected area.

Think of the condition after labor. The protective wall of muscle exists, to be sure, throughout a considerable portion of the endometrium, but the placental wound is now present. Here is every condition favorable to invasion, and as a consequence it does not surprise us to observe that, following labor, infection extends by preference through the placental site in place of extending by continuity of epithelial surface, as is the case following abortion or as the result of gonorrhœa. We recognize, however, that after labor extension of infection may occur also by way of the tube, and we know that following abortion there is often an abscess formation in the broad ligament. The tendency after abortion and gonorrhœa, as Terrillon has so graphically pointed out, is by way of the tubes; but we know also that infection after labor may extend in a similar manner, and we realize, in addition, that injury to any portion of the parturient canal, either following an interruption of pregnancy or its normal termination, may determine the course of extension as well as its severity, its complications and its sequelæ. In a word we understand that infection after abortion or after labor may extend in the different ways indicated, and we appreciate also the fact that the different methods of infection may occur in any case either simultaneously or consecutively.

And now the serious varieties of infection must be considered. They occur following abortion as well as labor; they differ in their origin and in their manner of propagation; they are modified by pre-existing diseased conditions; they vary in intensity in accordance with circumstances which favor or control bacterial growth; they may be sharply differentiated from the varieties of infection we have thus far discussed by the invasion of the medium of circulation, that is by infection of blood or lymph. In the varieties of infection already spoken of the infection has been primarily

local. When extension has taken place or when suppuration has occurred systemic infection may supervene, but in the conditions I now refer to the local lesion is often slight and unimportant, there is often no appreciable local symptom.

I ask your attention today to metastatic abscess formation following labor or abortion. It is observed more especially in connection with anomalous conditions incident to the removal of the placenta, as, for instance, where manual or instrumental delivery is necessary or when a piece of the placenta has been left behind. Following abortion, it occurs more often when some operative procedure has been undertaken for the removal of the secundines or in cases of criminal abortion when unclean instruments have been used by unskilled hands. In cases of placenta prævia, it is often noticed; also where extensive perineal lacerations extend through into the rectum rupturing the hæmorrhoidal veins. It is the condition designated in your text-books as "puerperal pyæmia." I take exception to the definition. It is not a pyæmia, if by that term we mean "pus in the blood." It is not "puerperal," if by this word we imply a special or a specific characteristic. It is a condition of metastatic abscess formation which may occur in consequence of endometrial infection. It occurs in other conditions as well, as your books on pathology will teach you. In works on military surgery especially you may read page after page descriptive of "pyæmia." It was of common occurrence before the aseptic era and it is not difficult to understand why it was such a frequent sequel of infected wounds.

You ask why? Because it must be remembered that blood vessels are closed by the formation of blood clots. If no bacteria are present, that is if an aseptic condition prevails, there is healing by immediate union. Not many years ago this was considered an unusual occurrence. Indeed so accustomed had we become to suppuration that in all operations provision was made in advance for free drainage. Nowadays we know better and the outcome of our knowledge is notably apparent in our methods of amputation of the extremities. In this hospital, as you have seen, it is the prac-

tice of my surgical colleagues to close immediately the amputation wound and to apply a plaster-of-Paris cast. In the greater number of cases nothing further is required and when the cast is cut off some weeks later it is the rule to find that the wound has healed without the formation of a drop of pus. Thirty years ago the practice was very different. It was taken for granted that suppuration must occur. The ligatures were left long and some days after the operation they were expected to slough off. If there was any delay the surgeon would gently pull on them from day to day until they were dislodged. Then the wound was subjected to a series of manipulation. It was probed and douched. "Red wash" and "black wash," as well as different salves, would be used. Caustics, poultices and a great variety of applications were recommended as septic complications arose. Is it difficult to understand how the thrombi that closed the blood vessels become infected? Is it not apparent how emboli might be broken off from these infected thrombi in consequence of all these manipulations? Can we not see how metastatic abscess formation would occur?

This condition differs from bacteriæmia, or septicæmia as it is less accurately called, by being an infection by emboli and not by single microbes. It differs also in the important respect that there is no development of bacteria in the circulating blood, which here acts only as a transporting medium. The emboli enter the veins, and possibly the lymph channels as well. They pass to the right heart and go direct to the lungs. Very often they form an infarct here with fatal result. At other times they re-enter the circulation and are arrested in almost any part of the body. These emboli are leucocytes infected by microbes; they may contain minute portions of dead matter. They are swept through the blood so hurriedly that they rarely infect its constituent parts to any serious extent. Their pernicious effect becomes apparent in the location where they become lodged. Here the usual processes of invasion take place with results identical to those observed when the infection occurs at the wound itself. Indeed in many instances the infection atrium is clinically undiscoverable.

The patient about to be presented to you is 26 years of

age, the mother of two children, the youngest being 4 years old. She secured a divorce from her husband, whom she designates as a brute, some four months ago. To celebrate her freedom the patient accepted the invitation of some ladies of her acquaintance to attend the theatre. While there she met a nice young man whom she had known prior to her marriage. The young man suggested a small bird and a large bottle after the performance. The prospect was too alluring to be refused. It is perhaps unnecessary to particularize further. When, three weeks later, the patient did not menstruate she quite naturally thought of the possibility of pregnancy. Some of her friends advised tansy tea and pennyroyal regulating pills. These remedies failing, the patient resorted to hot baths and douches, active cathartics and violent exercise, such as rolling down stairs. All these measures were ineffectual. The situation was becoming desperate. Finally she consulted an old practitioner who had been a sufferer from eczema of the hands for several months. Indeed, the day the patient called upon him he was just able to resume practice. His instruments, which had not been used for some time, were lying in a pan where they had been left when the doctor was taken ill some months previously. He passed a sound into the uterus and twisted it around so that a slight hæmorrhage was started up. Nothing happened during the next two days, so the patient called again. The sound was again introduced and manipulated within the uterus as before. Three days elapsed, and the patient, to her dismay, observed no change in her condition. She now submitted to the introduction of a hard rubber catheter which was twisted about within the uterus in a more vigorous manner, and which was kept in utero for several hours. This manipulation was evidently successful. Six hours afterwards the patient had some uterine hæmorrhage, a severe chill and high temperature. The young man, whom I had circumcised two years before, and who had also submitted at my hands to operations for urethral stricture, hæmorrhoids and appendicitis, called on me to attend the patient.

I found a temperature of 105°, and a pulse of 120. The uterine hæmorrhage was moderate and free from odor. No

abnormal condition of the pelvis could be detected by bimanual examination, nor was there any tenderness or pain elicited by such examination. I feared perforation and anesthetized the patient. I then forcibly dilated the uterus and explored its cavity by means of the finger and the blunt curette. No solution of continuity was discoverable. I gave a uterine douche of sterilized water and directed that the patient be brought to the hospital in the morning.

When I saw her the following day her temperature was 104° and she complained of neuralgic pains in the left arm below the elbow. Upon examination I found an abscess which I immediately incised, evacuating about an ounce of pus. The abscess cavity was irrigated with a boric acid solution and dressed with strips of iodoform gauze. No tenderness or pain was felt in the pelvis at this time nor during the entire course of the patient's illness, but she had temperature from the beginning, four months ago, until within the past ten days.

Three days after I had incised the abscess below the left elbow I found another one two inches above the elbow. This was treated in the same manner as the first one. Several days later two more abscesses appeared on the left arm, and were incised and drained. Then I found a large one on her right leg near the groin. After that had been incised another one appeared on the left arm. Then a second abscess developed on the right leg, eight or ten inches below the first one. This was incised, and subsequently a drainage tube was passed from one opening to the other. After that other abscesses appeared at irregular intervals on the left arm near the elbow.

You see the appearance of the patient. There are ten scars on the left arm near the elbow, and two scars on the right leg above the knee. There is also a scar on the right arm, but that developed subsequent to a hypodermic injection of morphine which my interne thought best to give one night when the patient was in severe pain. For the past two weeks there has been no temperature and it is probable that the metastatic abscess formation in her case is at an end. Why did it ever begin? Why was there not a localized suppuration somewhere within the pelvis? What etio-

logical factor determined this particular form of infection in this patient? In the absence of an autopsy it is impossible to give an adequate answer. We know, however, that starting somewhere—and in this case we can safely assume the point of departure to have been the endometrium—infected emboli entered the circulation, passed through the heart and lungs without inconvenience and became arrested in the arms and legs. Here the microbes developed with characteristic result, that is, with abscess formation. Fortunately for the patient all large abscesses formed were within reach of the scalpel. It was possible for us to treat them scientifically and to make them heal. I can assign no reason why localization of these abscess in this patient was superficial and not deep-seated but unquestionably this favorable circumstance meant to her life instead of death.

In the light of subsequent events the treatment received by this patient is open to criticism. Indeed it may have been the cause of her long continued illness. It is certain the manipulations within the uterus opened up channels which permitted infected emboli to enter the circulation. It is probable the repeated manipulations of the abortionist caused an infection of the endometrial epithelium. It is not unreasonable to suppose that the twisting of a hard rubber catheter within the uterus bruised the parts so that free entrance of microbes into the circulation became possible. At the same time it must be acknowledged that the defensive agency of the phagocytes may have walled off the infection atrium to a considerable extent so that but slight indisposition would have resulted had the patient been let alone.

It is not improbable that the curetting and uterine douching tended to cause the entrance of microbes into the circulation by exposing the open mouths of blood-vessels when the protective wall erected by the phagocytes was ruthlessly broken down. It is well known, as I have stated, that metastatic abscesses often follow the manipulation of wounds, as was observed in the case of the soldiery during our late war.

I will attempt a justification of my treatment. I said I feared perforation of the uterus. This is a relatively frequent accident and strange to say statistics prove it to be

usually devoid of danger. In this case I was forced to appreciate the fact that the uncleanly habits of the abortionist and the eczema of the hands from which he suffered predisposed to infection. I feared infection of the peritoneum and I think you will agree with me that in the event, of a perforation the probability of such an infection is not to be gainsaid nor is the danger to be apprehended a trifling matter. Under the existing circumstances I felt warranted in exploring the cavity of the uterus. Of course I did it with extreme care. I used a large blunt curette and did not attempt to scrape anything away. The douche, which was of hot, sterilized water, was used with a view of washing away any small blood clots or pieces of decidua that might serve as a soil for bacterial development. I admit it was hardly necessary. I knew there were no infected retained membranes for there was no odor to the slight discharge. At the same time it is a matter of routine practice with me to give a uterine douche after using a curette. I suppose this fact induced me to use the douche and I still think it was well to do so for it must be remembered there is always the possibility of introducing microbes when a uterine exploration is made no matter how thorough may be our asepsis.

Perhaps it may interest you to know what would have been done had a perforation been demonstrated by the curette passing through the uterine wall. I should not have felt justified in trusting to chance in that event. I have twice perforated the uterus by accident during some intra-uterine manipulation without appreciable ill effect. Nevertheless in this case my fear of peritoneal infection would have induced me to make an immediate abdominal section. Indeed the patient was prepared for a coeliotomy at the time of my first examination and the operation would have been performed while the patient was anesthetized had it seemed advisable. After opening the belly, the uterine wound would have received attention. Had the edges evidently become infected they would have been cut away. The wound would probably have been closed with Lambert sutures to approximate a relatively large amount of peritoneum over the uterine muscular tissue. This is the method I successfully pursued in a case of criminal abortion where a

silver catheter had perforated the uterus and become lodged under the liver. In this case there was no evidence of infection so, after sewing up the uterine wound, removing the catheter and a diseased tube and ovary, the abdominal wound was closed immediately. In the case before us the probability of infection would have induced me to prefer the use of a drainage tube or the application of a Mikulicz's gauze drain. This would have helped the localization of the abscess, had one formed, and thus have been an important factor in preventing general peritoneal invasion.

In puerperal cases the advent of metastatic abscess formation is usually delayed until the end of the first week or the beginning of the second, differing in this respect from other forms of infection following labor. It is almost always ushered in by a chill, which is severe and protracted. This chill is followed by others varying in intensity and occurring without special periodicity. After each chill there is usually a rise of temperature which may be excessive but which may not last very long. In some instances the temperature will fall to normal and remain there perhaps for several days, but more frequently, while there are remissions, there is always a slight elevation of temperature persisting for weeks or months.

A marked characteristic of these cases is the absence of local infection symptoms in the abdomen and pelvis. The patient will often feel perfectly well when the temperature has fallen. In mild cases there may occur within a week three or four chills followed by continued fever without localization of abscess formation that is discoverable. In most cases, however, sooner or later there is pain and swelling in or near one or more joints or their tendons, especially in the fore-arm, followed by the development of subcutaneous abscesses. The elbow and knee are most frequently involved, but the shoulder, the hip, the symphysis pubis or any other joint may be affected. At times the lungs and kidneys, as well as the spleen, may be the seat of metastasis, usually in the form of wedge shaped infarcts. An infarct of the lungs may be characterized by bloody expectoration and an infarct of the kidney by bloody urine, but in most cases these symptoms fail and the true state of affairs

is first discovered at the autopsy. The infarct of the lung often occasions a pleurisy which may become diffuse and cause a rapidly increasing dyspnoea, soon terminating in death.

Other organs may become involved, as for example, the parotid gland, which always suppurates, and the eye-ball. With the latter there is at first infection of the retina or choroid. The vitreous becomes clouded, intense pain supervenes, and in a few days sight is completely destroyed. The cornea becomes necrosed, perforation occurs followed by phthisis bulbi if the patient survives. Happily, metastasis to the eye-ball is a rare occurrence, at least in cases that recover.

In the second or third week of the puerperium, severe uterine hæmorrhage may supervene, due to extensive disintegration of placental thrombi. This form of hæmorrhage, occurring in connection with metastatic abscess formation, is of most serious import; indeed, it is often fatal.

It was my privilege, some twelve years ago, to see an interesting case in consultation with the late Dr. Nesbit, of Sycamore, Ill. The patient had had a miscarriage about the fifth month, if I remember correctly. She was up and around the afternoon I arrived in Sycamore, and complained only of headache in the left parietal region. She had been having chills and fever irregularly during the six weeks that had elapsed since the miscarriage. The headache had become gradually more severe and more persistent. The temperature was not excessive. The condition of the patient excited no serious apprehension in our minds. Examination of the pelvic organs revealed no abnormality of importance. The headache was ascribed to the patient's anæmic condition, and the probability of malarial infection was considered. I had nothing to suggest in the way of treatment in addition to the tonics and concentrated foods that were being given.

Two weeks later I was called upon to make an autopsy on this patient. It seems she had subsequently developed epileptiform seizures, and the pain in the head had become excruciating, so that morphine was injected. At times the patient would be apparently well. She had come to Chi-

cago, which necessitated a railroad journey of several hours, without special inconvenience. She had been here two days before she died. Shortly before her death she had walked to the dining-room for luncheon. She had complained of intense headache, was assisted to her bed, experienced a severe seizure and died within a few hours.

The important feature of the post mortem section was a large abscess involving the left lobe of the brain, and so located directly under the dura mater that it might easily have been incised and drained by trephining, had such a procedure been undertaken. Dr. Frothingham and Dr. Randell kindly assisted me at the autopsy, and I remember we deplored the fact that no radical operation had been proposed.

It becomes evident from the case before us, the case I have just referred to and others which I might mention, that at times during the puerperal state, abscesses are started up in the different parts of the body without the occurrence of an abscess within or around the uterus. It is evident the infection starts from some portion of the parturient canal. Clinical experience shows that local symptoms are usually absent. Our first suspicion of the actual condition is the advent of chills and other constitutional symptoms, as I have explained. Our first knowledge of the true state of affairs is the observation of abscess formation far removed from the genital organs.

I will not attempt to describe just what takes place in every instance where an embolus becomes arrested in the different organs or tissues of the body. When metastatic abscess formation was supposed to be due to pus in the blood, objections were raised on mechanical grounds to the explanations then advanced regarding the facts as they were observed. It is now profitless, indeed it is questionable if it be even of historic interest for us to consider the wild imaginings of fervid theorists in connection with the varied complications of infection as it occurs in the puerperal woman. Since we have had some knowledge of bacteriology our theories are simplified. We recognize the facility with which all portions of the body may be invaded. We know something of the action of different bacteria under

conditions suitable for their growth. We realize without any great effort of the mind, that pathogenic microbes, wherever occurring, will produce their characteristic results provided circumstances permit of their development. We understand also that these results vary in degree and extent according to well determined principles which I have often enumerated. It is not necessary that every microbe should cause suppuration; it is not imperative that every case of suppuration should prove fatal. When the abscesses are superficial, they may be evacuated and the microbes may be removed. When the abscesses occur in the brain, the liver, the kidney, the pleura and other internal organs, modern surgery, under aseptic conditions, is perfecting almost daily new and successful modifications of the simple means applicable to the treatment of pus collections wherever found.

There is work for our pathologists in connection with this subject. If there is a primary focus of infection within the uterine musculature, if there is suppuration in the uterine blood and lymph vessels as Charpentier claims, a timely hysterectomy may prevent metastatic extension. We must, however, be told how to recognize such a focus. The uterus cannot be removed every time there is a chill in the second week of the puerperium nor is its removal likely to be of much avail if performed when the process of metastatic abscess formation is well under way. Indeed the operation itself, as must be remembered, is a serious undertaking from many points of view and the shock of such an operation may easily prove fatal in a patient already seriously debilitated.

The limitations of our knowledge of metastatic abscess formation must be acknowledged. We know a great deal when we realize the extent of our ignorance. It saves us from fanciful hypotheses and prepares us to await, perhaps not without impatience, until further and more careful observation shall permit the formulating of a scientific and successful method of treatment. For the present we can only appreciate more thoroughly than ever the importance of systematic prophylaxis. It is no longer justifiable to assert that labor is a physiological process and for that reason requires no supervision. Young practitioners are apt

to take this view of the subject. They think differently when a few fatal cases of infection are observed. I confess I fear for every obstetrical case until the patient is up and around. When I consider the danger to which every parturient is exposed, and when I realize how easily infection may occur, it is at times a wonder to me that any woman lives through the ordeal of labor.

The important treatment of metastatic abscess formation is the preventive treatment. We know enough to know this much even if the exact pathology of the condition is not clearly understood. If we will but bear in mind how dangerous is this complication of labor and what a simple thing it is for it to develop in any obstetrical case, we will be less likely to begrudge the time spent in thoroughly washing our hands, we will clean our nails with greater care, we will use the brush with greater vigor, we will pay the strictest attention to every detail of asepsis, for the patient's life may depend upon our actions.

In addition to this increased care in carrying out every aseptic detail, we will not fail to remember the possibility of causing, by our own injudicious manipulation, the evil we seek so strenuously to prevent. In every case where a uterine douche is given, where the uterus is dilated, or packed with strips of iodoform gauze, in every case especially where a curetting seems indicated we will have before us, as a definite and well outlined picture held up to the mind's eye, the defensive barrier which has been thrown out to prevent or limit systemic invasion. We will appreciate the importance of this protective wall of embryonal cells and we will realize, from our observation of cases of metastatic abscess formation, how very dangerous is the complication that can so easily ensue.

As regards the abscesses themselves there is little for me to say. They must be incised, drained and made to heal in accordance with the simple surgical principles I have so often insisted upon. Often a single free incision and a packing of the abscess-cavity with gauze will be sufficient. In other cases drainage tubes and irrigation may be needed. Sometimes it may be necessary to curette; occasionally an organ may have to be removed. The advances made of re-

cent years in surgical technique enable us now to reach abscesses of the brain and other internal organs.

The administration of antipyretics is to be condemned. It requires some force of character to abstain from their use. It is so comforting for the patient and her friends to learn that the temperature has dropped. Such treatment, however, masks the symptoms and tends to make us give a false prognosis.

It is possible that in the future some form of serum therapy may prove of value; but as yet our knowledge is too incomplete to warrant definite advice. Strychnia and alcohol are of benefit while the process of abscess formation progresses. The free evacuation of pus as soon as its presence is manifest prevents secondary infection. When all abscesses are superficial so that they can be properly treated, a certain number of patients will recover but in many instances the prognosis is very serious.

At the same time it must be acknowledged that as our means are limited of definitely knowing the exact extent to which the formation of abscesses may have gone, we necessarily find it difficult to make a reliable prognosis in some cases. In a general way it may be said that where, from the beginning, the chills occur at long intervals, where the fever rapidly subsides and especially where we fail to detect abscess formation, it is not improbable the patient may recover. Indeed even very severe cases sometimes terminate favorably. Olshausen has reported a case of severe metastasis, following a ruptured perineum where the six principal joints of the lower extremities suppurated and became ankylosed, yet in spite of all this the patient lived. Nevertheless a great many patients die on account of the universality of the infection and because the abscesses that form are beyond our reach. Cases of this character show us the futility of our art and to me they serve as a constant reminder of the value of consistent asepsis.

Notes and Comments.

There are eleven large recognized medical schools in London, all of them connected with hospitals, so that close clinical instruction is one of the paramount advantages. The fees of students are high, as judged by the American standard, averaging about two hundred dollars for each annual session.

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Dr. Herman M. Biggs, of New York City, reports that the death rate in that city from diphtheria and croup has declined nearly forty per cent. since the introduction of diphtheria antitoxin in 1895; and that this reduction has taken place in spite of an increase in the number of reported cases of the disease, allowing a close identity in the cases reported as croup and diphtheria.

* *

The recent International Medical Congress at Moscow was in every way a pronounced success, there being some 8,000 medical men present. America was well represented Chicago sending a considerably larger number than any other American city. The next congress is to occur at Paris in 1900, and during the time of the great International Exposition. In 1903, however, it is earnestly expected by some of the leading spirits that Chicago will be selected.

* *

Prof. Rudolph Virchow probably stands today as the foremost European representative of medicine, and the lustre of his name and prominence was but brightened by his appearance and address before the late International Medical Congress at Moscow. He was met by a marked and spontaneous expression of esteem from the representatives of all countries assembled, and it must have been a proud moment for the grand old scientist now nearing his eightieth year of age. We are pleased to show an excellent likeness of Prof. Virchow with the present number, it being a

photogravure reproduced from a copper-plate etching recently obtained in Berlin.

* *

Leyden affirms that the treatment of pulmonary tuberculosis by means of tuberculin, or any other so-called specific medication, has always been valueless and that the present hope in the professional mind of the development of a specific medicinal cure is small. Up to now the only treatment which has given positive results is the climatic. The change to a dry, mountain climate has lengthened the days of a good many tuberculous patients, and no delay should be allowed in affording an early advantage in recognized or suspected cases. It seems that a mountainous climate is beneficial chiefly because of the purity and dryness of the air, and it is these two considerations which should influence one in sending, or in going, to a retreat.

* *

"The curette was introduced by Récamier in 1843, and at once fell into disuse, though Récamier persisted in it, especially for the treatment of what he called 'fungosities.' In 1846 Sir C. Locock described a scoop for removing malignant nodules. In 1861 Routh modified Récamier's curette, and published some cases on the cure of metrorrhagia. In 1866 Sims introduced the sharp curette, and in 1874 Thomas and Munde advocated "a dull curette of flexible copper," which remained in use in America for some years. About the same time Hegar, Kaltenbach, and Olshausen in Germany, and Trousseau and Neaton in France, were using it. In England it was a long time in coming into use, and was strongly opposed by Barnes and Atthill, and probably it would not have come into use at all had it not been for the introduction of antiseptics."—Gemmell.

* *

"Sydenham—not Linacre or Harvey—is the model British physician, in whom were concentrated all these practical instincts upon which we lay such stress in the Anglo-Saxon character. The Greek faculty which we possess of thinking and acting, has enabled us, in spite of many disadvantages, to take the lion's share in the great practical advances in medicine. The three greatest scientific movements of the

century have come from Germany and France. Bichat Laennec, and Lewis laid the foundation of modern clinical medicine; Virchow and his pupils of scientific pathology; while Pasteur and Koch have revolutionized the study of the causes of disease; and yet the modern history of the art of medicine could almost be written in its fulness from the records of the Anglo-Saxon race. We can claim almost every practical advance of the very first rank—vaccination, anæsthesia, preventive medicine and antiseptic surgery—the ‘captain jewels in the carcanet’ of the profession, beside which can be placed no others of equal lustre.”—*Osler: Address in Medicine, Brit. Med. Ass’n., 1897.*

* *

The American Pediatric Society is making a Collective Investigation of Infantile Scurvy as occurring in North America, and earnestly requests the cooperation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final report of investigation will be sent to those furnishing cases.

J. P. CROZER GRIFFITH, M.D., *Chairman*, 123 S. 18th St., Phila.

WILLIAM D. BOOKER, M.D., 853 Park Ave., Baltimore.

CHARLES G. JENNINGS, M.D., 457 Jefferson Ave., Detroit.

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J. LOVETT MORSE, M.D., 317 Marlboro St., Boston.

Committee.

* *

Commenting upon the art of longevity and the difficulty of so planning one’s custom of life so as to prolong his days, the *Hospital* says:—

“We are reminded of a case tried before the late Mr. Justice Denman about a disputed right of way in an agricultural parish, which mainly turned upon the recollections of the oldest inhabitants. One of these was a hale and vigor-

ous yeoman of eighty five, whose erect figure, keen intelligence, strong voice, and clear testimony created so strong a sensation in the court that the Judge, who was by no means free from a tendency to improve any promising occasion, detained him in the box after his evidence on the matters in dispute had been concluded, and questioned him in regard to his mode of life. The witness, nothing loth, explained that he was a vegetarian and a total abstainer, and entered into various details concerning his hours of rising and retiring, the amount and character of his daily exercise, and other matters of like kind. The Judge, in dismissing him, expressed a hope that all who were present might profit by his example, and then the next witness was called. This was another yeoman, the elder brother of the preceding, and fully a match for him in strength, activity and intelligence. As he was about to retire the Judge stopped him with the observation, 'I suppose that you also, Mr. Greenfield, are indebted for the preservation of your strength and faculties to a careful observance of the same sobriety and of the same regimen which have been so well described to us by your brother?' 'Ha'n't been to bed sober for fifty years, my lord,' was the unblushing and startlingly unexpected reply."

* *

In a paper read before the Johns Hopkins Hospital Historical Society by H. H. Young, A. M., M. D., much evidence was advanced to show that Dr. Crawford W. Long, of Jefferson, Jackson Co., Ga., where he located in 1841, "at that time a small country town, far removed from any railroad, in the midst of a farming community whose only factory was a cotton gin," used ether to produce surgical anæsthesia in the year 1842, antedating Morton's earliest claims by four and a half years.

Dr. Long read a paper before the Georgia State Medical Society in 1852 in which he recounted his experience with ether, and cited cases. Dr. Young in speaking of this says: "Dr. Long reports the first five cases in which he used ether, being desirous only of establishing priority of use. An examination of the letters and certificates before me, however, shows that he must have operated on at least

eight cases before Morton's 'discovery.' This number seems small, but is not so astonishing when we remember that the country was sparsely settled, that Jefferson was a mere village and Long had just entered practice." A copy of the original charge in Dr. Long's journal, here given, specifies date, the employment of ether and a somewhat unique financial consideration therefore judged by the standard of fifty years after.

"James Venable,

To Dr. C. W. Long, Dr. .

1842

January 28th, sulphuric ether,.....	.25
March 30th, sulphuric ether and exsecting tumor, ...	\$2.00
May 13th, sulphuric ether,.....	.25
June 6th, exsecting tumor,.....	\$2.00

Many letters and much evidence in Dr. Long's favor also appear in the article, adding not a little to the sum of this great historical controversy.

* *

In connection with the treatment of pericardial effusion, particularly brought to the attention of readers of the *Review* by Dr. Patton's masterful contribution in this number (the first of the series), occurs some reflections in the leading editorial of the September *Therapeutic Gazette*. The writer therein coincides with Dr. Patton in a recognition of the fallacy, or at least dissatisfaction, in the employment of diuretics and purgatives for positively relieving this condition.—"Where the condition is pressing because of interference with vital functions it is often absolutely necessary for the purpose of saving life to be bold enough to abstract by means of a trocar and cannula." Probably the reason why paracentesis pericardii is not oftener performed is owing to the universal apprehension of damaging the heart muscle itself—a thing most certainly to be avoided, yet possessed of not so great consequence after all, judging from the evidence of the editorial writer above mentioned, who says:—"As a matter of fact injuries to the heart muscle itself are not capable of producing any more serious results than puncture or incision of any one of the other muscles of the

body, unless the puncture is of such a character as to lacerate or sever a large number of heart fibres or the coronary arteries, thereby interfering with the action of the heart, or unless the puncture tends to strike one of the nervous ganglia in the heart muscle which govern the beating of this viscus." An instance is then mentioned wherein puncture of one of the cavities of the heart took place at the hands of the writer and two ounces of blood was withdrawn, the passage of the trocar *into the heart* being of course unintentional. On this same case, the following day, the same operation was repeated with identical results, the heart being punctured and blood extracted. It is stated that for several hours after each operation the patient experienced decided relief.

Book Reviews.

HYSTERIA AND CERTAIN ALLIED CONDITIONS. Their Nature and Treatment, with Special Reference to the Application of the Rest Cure, Massage, Electro-Therapy, Hypnotism. Etc. By **GEORGE J. PRESTON, M. D.**, Professor of Diseases of the Nervous System, College of Physicians and Surgeons, Baltimore; Visiting Physician to the City Hospital, Etc. Illustrated. 298 pages. P. Blakiston, Son & Co., Publishers, 1012 Walnut Street, Philadelphia. 1897. Price, \$2.00.

The author of this excellent volume has carefully reviewed a large amount of literature on the subject of hysteria, as is shown by numerous references to the most important publications.

The book has been prepared not so much for the specialist as the general practitioner, and is destined to become popular among physicians desiring a practical treatise on this oftentimes puzzling disease.

The opening chapter is historical, and in a manner highly interesting are described many of the nervous affections, epidemic in character, that created such intense excitement in earlier times.

Here we find explained as manifestations of some form of hysteria, that curious and fantastic dancing mania, known as the dance of St. John, the dance of St. Vitus and of St. Guy. In a later period a form of hysteria was that seen among the Nuns of St. Ursula, at Aix, who declared they were nightly visited by the priest of the village and although innocent he suffered death at the hands of the authorities.

A brief retrospect of many other forms of hysteria are concisely described. The author admits in the chapter on the nature, etiology and pathology of the disease, that in the very name "hysteria" we are obliged to make a concession, for whatever we may or may not know about hysteria, this much is certain, that it has no causative dependence upon the uterus. Under symptomatology the author well

says that the disease includes the functions of the entire body and that in an hysterical subject we never know what symptoms to expect.

Systematically considered are:

1. Disturbances of sensation—*anæsthesia*, *paræsthesia*, *hyperæsthesia*, affecting both general sensibility and also the special senses.
2. Disturbances of motion — paralysis, contracture, tremor, convulsive seizures.
3. Vaso-motor, visceral, and nutritive disturbances.
4. Mental symptoms,
5. Miscellaneous symptoms not belonging to any of the foregoing classes.

The author, after noting the rarity of the reproductive organs as the source of hysterical manifestations, states that the reason why so many hysterical women refer most of their ills to the organs of generation is because the hysterical mind is peculiarly open to suggestion, and the reproductive system, with its mysteries of menstruation and pregnancy, furnishes a most fruitful field for suggestion.

It is to be hoped that the clearer knowledge of the nature of hysteria will restrain the operative fury with which the past decade has become so familiar, and that the ovaries will no longer be removed to cure a disease which is resident in the higher cerebral centers.

In the treatment of the disease much stress is laid on prophylaxis, and the treatment of the general hysterical state, and certain special symptoms, is set forth in a most practical and detailed manner, including electro therapy, hydrotherapy, massage, the rest cure, hypnotism, and surgical interference.

E. L. H.

BURDETT'S HOSPITALS AND CHARITIES, 1897. Being the Year Book of Philanthropy. By HENRY C. BURDETT. London: The Scientific Press (Limited). Chicago: D. C. Heath & Co.

We have had the privilege of reviewing previous editions of this valuable work of information on hospitals, and allied charities; and upon former occasions have been called upon to offer, in a perfectly friendly spirit, some rather strong

criticisms upon, and objections to, the very notable absence of due and proper representation of Chicago's institutions in a book which purported to be a reliable guide or complete index of at least the more important centers of Great Britain, its provinces and America. We are now pleased to note—and we speak of it with more than passing interest—that Chicago is well cared for, almost three pages being given to the hospitals of this medical center, although detailed information appears in but few cases. This, however, is no fault, we are now thoroughly convinced, of Mr. Burdett, for he clearly places the responsibility in a statement touching upon our criticism of a year ago. We quote his words as follows, (p. 206):—"The point made by our critic was caused by a misapprehension—a failure to appreciate the difficulties caused by the want of public spirit exhibited by the officials of hospitals in Chicago, a spirit which we are glad to say does not prevail to anything like the same extent in any other city in the world."

This is a hard crack at the officials of Chicago hospitals in general, and calls for no excuse on our part. In the event of the absence of detailed knowledge there can be no just criticism lodged against Mr. Burdett when he affords every opportunity to those having that knowledge to furnish it to him for publication.

But to the book this year. It has over 900 pages of solid information covering about everything one would be likely to think of or look for in regard to hospitals and sick charities. The first chapter is given to the Queen's Commemoration, and its mighty significance to the hospitals everywhere within the Queen's domain.

Following chapters deal with hospital construction for the preceding year, hospital management, general charities, hospital finances etc. Then comes an exhaustive list of hospitals and asylums in England, English colonies and America, terminating with almost 100 pages devoted to the year's work in philanthropy.

EYE STRAIN IN HEALTH AND DISEASE. With Special Reference to the Amelioration or Cure of Chronic Nervous Derangements without the aid of Drugs. By Ambrose L. Ranney, A.M., M.D., Late Professor of Nervous Diseases in the Medical Department of the University of Vermont; Late Professor of the Anatomy of the Nervous System in the New York Post-Graduate School and Hospital, etc., etc. Illustrated with thirty-eight wood engravings. One Volume Royal Octavo, p. 321. Extra cloth beveled edges. The F. A. Davis Co., 1914 and 1916 Cherry St., Philadelphia. 9 Lakeside Building, Chicago.

This interesting book, from the well-known author, comprises, as stated in the preface, the substance of several monographs that he has published from time to time during the past ten years in medical journals, with the addition of considerable new matter. He gives, also, the histories of many typical cases in detail with the view of illustrating some remarkable results of eye-treatment alone, upon various forms of nervous disturbances that have existed for years and have not yielded to any other form of treatment.

In the first chapter, under the caption "The bearings of eye-strain upon the duration of human life," the author argues for eye-strain as the underlying cause of many ailments accompanied by impaired nervous vitality, and states his belief that "so-called inherited predisposition" to certain diseases is unquestionably based in many cases upon some anomaly of the visual apparatus. This may be so, but we are disposed to think that it will require more than a statement of belief or even *a priori* reasoning to confirm it. His statement that "sick-headaches are due primarily, in almost every case, to some optical defect" of the eyes, will hardly receive the concurrence of most ophthalmologists, who experience difficulty in relieving this class of headaches by the fitting of glasses. It may also be truthfully said that quite a number of sufferers from megrim show no refractive error whatever, or at least one so slight as to be almost insignificant.

It is conceivable that the eye-strain occasioned by an uncorrected refractive error may aggravate or even excite an attack of this kind, but that this is the ultimate cause "in almost every case" is disproven by the frequent exceptions.

The second chapter contains a rather extensive description of most of the different methods in use for testing the vision and measuring the ocular movements. Although some space is devoted to a description of the ophthalmoscope, and of the ophthalmometer, which expensive instrument no general practitioner would ever care to possess, no mention whatever is made of skiascopy the most valuable of all objective methods for determining the refractive condition of the eye.

We are surprised, too, that throughout all his examinations, as shown by his records, the author places such reliance upon prisms for measuring the adductive power of the muscles. The power of the internal recti of overcoming diplopia produced by prisms varies to such an extent, according to the condition of the patient or according to the amount of training the eyes have had in this particular direction, as to make this method very unreliable as a means of testing the power of convergence.

There follows in chapter III a detailed account of fifty consecutive cases of headache and neuralgia in Dr. Ranney's experience, caused by eye-strain, in which the eyes alone received treatment.

In examining this record of *fifty consecutive cases*, one is struck with the fact that all of them, without an exception, showed, beside the refractive error, marked heterophoria, and of the whole number *twenty-five* showed *hyperphoria* mostly of a high degree. This is of itself very unusual. A few of these cases were treated with glasses alone, but most of them, in addition to correcting the optical defect, were subjected to the operation of partial tenotomy of one or more of the eye muscles. It is interesting to note that those treated in the former manner were quite as effectually relieved of their headaches and distress, even although they exhibited considerable degrees of exophoria or esophoria, as those treated by operation, many of whom were but partially benefitted. That headaches of a certain kind may be relieved by a careful correction of optical defects such as hyperopia and astigmatism is beyond question, but that it is necessary to add to this an operative procedure merely be-

cause a so-called lack of muscular balance exists, is very widely open to debate.

The eye treatment of chorea, sleeplessness and gastric disturbances follow in separate chapters, and the results are attested by numerous testimonials from the relieved sufferers. We can not see the necessity of introducing into a scientific treatise such flattering testimonials and encomiums.

But the chief interest of the book centers around Dr. Ranney's description of the eye treatment of epileptics. He gives a detailed description of twenty-six (26) cases of epilepsy, in which all drugs were discontinued and ocular treatment alone was employed. Of this number 22 showed esophoria varying from 2° to 15° ; 7 showed hyperphoria varying from $\frac{1}{2}^{\circ}$ to 9° and only 2 showed exophoria, from 16° to 18° . In many of the records we are told that "a high degree of latent esophoria existed or disclosed itself," but how much we are unable to ascertain and therefore we can not know how great an esophoria was relieved by a partial tenotomy. The author claims to have cured seven cases of the twenty-six. With one of these ten years have elapsed without an attack; three have gone three and a half years; two have gone four years and one has gone five years without a recurrence of the fits. Three other cases he claims were so greatly improved as to be practically cured. There were nine cases of amelioration. Three were not improved, and four discontinued treatment. In all of these cases graduated tenotomy was performed, frequently several times in the same case to correct an esophoria of comparatively low degree, but we are informed that esophoria, formerly latent, became manifest and necessitated this. We could add another explanation quite as plausible, viz., that partial tenotomy in many cases is quite ineffective, and where there is much defect, the tendon must be completely divided in order to accomplish any definite result.

It is an assumption unwarranted by the facts, to state that in esophoria the internal rectus is too short or has had its insertion too far forward and therefore it should be cut. We have just as much reason to believe (indeed more reason in a case of epilepsy) that such an esophoria is due to faulty

innervation of the muscles from an over-active nerve center or to the nucleus of its opponent being weak.

The cases cited are, to our mind, insufficient to prove that the ocular defects were the cause of the epileptic attacks, or that they should stand in any other relation than that of concomitant conditions.

Altogether the book is unsatisfactory. It is not complete enough to give the ophthalmologist any clearer insight into the intricacies of heterophoria and asthenopia and it is quite liable to be misleading to the general practitioner, whose lack of special information makes it impossible for him to correctly analyze many of the matters contained therein.

W. H. W.

A TEXT BOOK OF THE DISEASES OF WOMEN. * By CHARLES B. PENROSE, M.D., Ph.D., Prof. of Gynæcology in the University of Pennsylvania; Surgeon to the Gynæcean Hospital, Philadelphia. Illustrated. Philadelphia: W. B. Saunders.

In a volume of 529 pages the author has written upon the principal diseases peculiar to women in a very clear and concise manner.

A gift that all medical men do not possess is by Dr. Penrose exhibited in a marked degree, that is of not being a verbose writer. His ideas are given in a comprehensive, lucid and concise style. While by some his teachings may seem a trifle dogmatic, yet we believe they are given after an extended experience, and in the main would furnish a safe rule to be guided by. The surgical aspect of the book is much stronger than the medical.

The chapter on injuries to the perineum, and the results of these injuries, is particularly clear, and his suggestion that one should have a correct knowledge of the anatomy of the parts before attempting to repair an injury to them is very timely. The chapter on diseases of the Fallopian tubes is very satisfactory. He shows clearly that pelvic peritonitis and cellulitis are secondary conditions. His ideas of fibroid tumors of the uterus, although radical as compared to that of a few years ago, are, we believe, correct. With the improved technique, of which we are now possessed,

there are not the reasons for waiting to see how much of an invalid a fibroid will make of a woman before doing anything for her.

Just why the author did not include vesical growths, when considering diseases of this organ, is not quite clear; also why he did not include dysmenorrhœa in the chapter on disorders of menstruation is not plain, for dysmenorrhœa certainly does exist when an examination of the pelvic organs discloses nothing pathological.

The illustrations are mostly very good, some being particularly clear and conveying the idea the author wished.

To any one wishing a practical guide in his gynæcological work, we most heartily recommend this book. While it does not take the place of the larger, more encyclopedic works, it does give a good view of gynæcology as it is practised to-day.

G. W. N.

Review of Clinical Literature.

Being a List of the Leading Clinical Articles of the Past Month:

Arranged Alphabetically by Title, Giving Author and Reference

MEDICINE.

- Angina Pectoris: Its Relation to Dilatation of the Heart.—J. H. Musser, Philadelphia.—*Am. Jour. Med. Sci.*, Sept.
- Addison's Disease, Observations on the Relation of, to Alterations in the Suprarenal Capsules: With a Report of Four Cases.—T. R. Bradshaw, Liverpool.—*Liv. Med. Chir. Jour.*, July.
- Cretinism, Sporadic, and its Distinction from Forms of Idiocy and Other Diseases.—H. Koplik, N. Y.—*N. Y. Med. Jour.*, Sept. 4.
- Gastric Ulcer, The Signs and Symptoms of.—R. O. Adamson and J. C. Renton, Glasgow.—*Brit. Med. Jour.*, Aug. 21.
- Liver, Tropical Abscess of the (concluded).—W. T. Howard and C. F. Hoover, Cleveland, O.—*Am. Jour. Med. Sci.*, Sept.
- Liver, Cirrhosis of the.—J. Barr, Liverpool.—*Liv. Med. Chir. Jour.*, July.
- Porencephaly.—J. Wiglesworth, Liverpool.—*Liv. Med. Chir. Jour.*, July.
- Poliomyelitis, Cases of.—H. M. Sherman, San Francisco, Cal.—*Occid. Med. Times*, Aug.
- Phlegmonous Gastritis, a Case of, Following Ulcus Carcinomatosum of the Pylorus, etc.—J. C. Hemmeter and D. Ames, Baltimore.—*Med. Rec.*, Sept. 11.
- Tuberculosis, the Scientific Treatment of.—J. L. Barton, N. Y.—*Med. Rec.*, Sept. 11.

Some of the different kinds of enlargement of the spleen are given by Curnow, as follows:

1. It undergoes slight physiological distension and contraction; and there is a slight physiological enlargement after a large meal.
2. It enlarges in every acute infectious disease, *e. g.*, in enteric fever, septic poisoning, ulcerative endocarditis.
3. In cases of valvular disease of the heart, pain and local swelling due to emboli are often present.
4. Ague cake. This is a chronic fibroid enlargement

sequential to a chronic congestion. In all acute cases the blood should be examined for the plasmodium of ague.

5. Chronic congestion due to chronic cardiac or hepatic disease. When there is not much enlargement of the spleen there is much ascites, and *vice versa*, because the blood is stored up in the spleen instead of exuding its serum into the peritoneum.

6. Growths and degenerations. (a) Leukemia: This disease consists of the blood change plus the enlargement of the spleen. The enlargement of the spleen here is a true hypertrophic change—all the elements of the spleen being enlarged. (b) Lymphadenoma: This consists of the blood change plus enlargement of the glands. (c) Lympho sarcoma: In this disease the spleen is enlarged, but there is no blood change. Mixed cases of (a) and (b) sometimes occur. True cancer and sarcoma are so rare that they may be left out of consideration.

7. Lardaceous degeneration. This is very common in connection with prolonged suppuration, with phthisis, with rickets, syphilis, and other constitutional affections.

8. Tuberculous spleen usually occurs in connection with tuberculosis of other organs.

9. Acute syphilitic enlargement occurs occasionally during the febrile stage, when the sore throat and rash are present. It occurs in congenital or late syphilis. It may be a peri splenitis, *i. e.*, inflammation of the fibrous capsule of the spleen; or, more generally, proliferation of fibrous tissue, which later leaves a hard cirrhotic spleen. Gummata in the spleen are rare.

10. Hydatid cyst in the spleen is rare, but may be mistaken for one in the left lobe of the liver.

SURGERY.

Bone Tuberculosis in Children, A study of 73 cases of, with Reference to Prognosis and Treatment.—P. K. Brown, San Francisco.—*Occid. Med. Times*, Aug.

Fistulo in Ano, Palliative and Operative Treatment of.—J. B. Blake, Boston.—*Bos. Med. & Surg. Jour.*, Sept. 2.

Herniæ, Large Ventral and Umbilical in the Adult, with Three Cases of Radical Cure by an Improved Technique.—A. Goldspohn, Chicago.—*Am. Gyn. & Obs. Jour.*, Sept.

Intubation, Report of 40 Cases of.—C. B. Stevens, Worcester, Mass.—*Bos. Med. & Surg. Jour.*, Sept. 16.

Intestinal End-to-End Approximation After the Use of the Frank Coupler, Pathological Histology of.—J. Frank, Chicago.—*Med. Rec.*, Sept. 18.

In a report of a case of congenital malformation of the rectum, and in connection therewith a consideration and discussion of the treatment of imperforate anus, Dr. E. R. Kirby maintained before the Philadelphia Pediatric Society that:

1. An operation should always be performed, and performed without delay.
2. If there be any chance of establishing an opening at the normal site of the anus, the surgeon should at first direct his attention to this procedure.
3. The use of a trocar as an aid in finding the rectal pouch before or after incision through the perineum is not sanctioned by modern surgical authority.
4. The results of attempts to establish an outlet for an imperforate rectum through the perineum, are not favorable as regards the production of a useful anus.
5. In case of failure to establish a new anus in the anal region, colostomy should at once be performed.
6. In the formation of an artificial anus the left groin is the best site for the operation.
7. Attempts at establishing an anus in the anal region after a colostomy are attended with great danger, and are generally unsuccessful.

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With reference to the prevention and treatment of surgical shock and hæmorrhage, Dr. W. B. Chase, of Brooklyn, N. Y., maintains (*Am. Jour. Obs., Sept.*) that:—

- “1. The treatment of shock should be preventive and curative, and to a large degree the indications for the former define the lines of treatment in the latter.
2. The proper exhibition of preventive measures includes a careful study into the functional activity and organic status of all important organs, and such treatment by hygienic, dietetic, and therapeutic measures as will elevate the standard of bodily and mental health to a degree in

which the maximum power of resistance may be produced and maintained.

3. Special emphasis should be given to lithæmic and uræmic excretion, and the condition of the circulatory and nervous systems.

4. Knowledge as to inherited power of resistance to and recovery from, serious diseases and accidents, is of the highest value in determining the course of procedure and estimating the chances of recovery after capital operations.

5. A supply of facilities and drugs for meeting all emergencies should be in constant readiness, with exact knowledge for the indication, dosage. physiologic and therapeutic effect of special heart tonics and stimulants, which include strychnia, digitalis, sparteine, nitroglycerin, brandy and codeia.

6. Limit the time of an operation to the shortest period compatible with thorough work and proper technique.

7. Save your patient from the shock of fear to the utmost, and in selected cases proceed to operation without informing the patient of your purpose.

8. In shock with hæmorrhage supply the volume of venous and arterial loss by direct transfusion of normal salt solution into the patient's vein.

9. Bear in mind the influence position has on the circulation under both shock and hæmorrhage, especially in anæmic conditions of the cerebro-spinal nerve-centers and the heart."

OBSTETRICS.

Hysterectomy, The Indications for and the Technique of.—J. Homans, Boston.—*Am. Jour. Med. Sci.*, Sept.

Pus in the Pelvis, The Surgical Technique of Operations for.—I. S. Stone, Washington.—*Am. Jour. Obs.*, Sept.

Pregnancy, Retroperitoneal Ectopic, at Full Term.—J. W. Bovee, Washington.—*Am. Jour. Obs.*, Sept.

Uterus, The Conservative Treatment of the Myomatous.—H. Robb, Cleveland, O.—*Am. Jour. Obs.*, Sept.

Uterus, The Results of 147 Operations for Retroversion of the.—A. L. Smith, Montreal.—*Am. Gyn & Obs. Jour.*, Sept.

Vaginal Hysterectomy: A Review of 66 Consecutive Cases.—C. J. Davis, Chicago.—*Jour. Am. Med. Ass'n.*, Sept. 18.

We have recently observed an interesting table com-

piled from official reports of various European maternity hospitals and clinics showing the varying frequency in the application of forceps in labor. This compilation illustrates the difference in opinion as to the time limit, as well as other demands, for an instrumental delivery. These differing figures cannot be held to express much more than a varying practice, for logical deductions only could be made by having detailed knowledge as to the time limit allowed in an otherwise normal labor, as well also as to the extent to which advantage is taken for the demonstration of the use of forceps to students, without other actual demands for their use existing.

	PER CENT.
Kezmarszky, Budapest, 1874-1882.....	1. 4
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Von Saxinger, Tubingen.....	6. 5
Olshansen, Halle.....	8. 4
Schauta, Innsbruck, 1881-1887.....	9.16
Schultze, Jena..	11. 6

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Homans of Boston, (*Am. Jour. Med. Sci., Sep.*) gives a concise summary of the indications for hysterectomy. They are so clear-cut and comprehensive that we take the liberty of quoting quite in full:

"1. In intractable, often-recurring hemorrhage without discovered fibroid or malignant disease, when all the usual remedies have been tried and curetting has been done every few weeks without permanent success. Clinical reasons prevail over histological, and practical over theoretical.

2. In all kinds of malignant disease, when the operation is possible without permanent injury to the bladder or

bowels. Even if there is little hope of cure, the hemorrhage may be stopped, and there is less subsequent pain and discomfort than when the disease is left to run its natural course.

3. (a) In a case of fibroid tumor which causes much discomfort or (b) threatens death by hemorrhage (and it does sometimes not only threaten, but causes it as suddenly as a pulmonary hemorrhage does). (c) Because it may increase and become too burdensome to allow life to be worth living. (d) Because it may develop a cancerous character. (e) Because by its pressure on the abdominal organs it may destroy life. (f) Because it may become cystic and thoroughly adherent. I do not mean fibroids with dilated lymph-spaces; but fibroids with cysts as clear and distinct as those in ovarian tumors. (g) Because it may be an ever-present anxiety. (h) Because it may cause oedema of one or both extremities and phlebitis, to be followed, perhaps, by the passage of an embolus into the circulation, causing death by cardiac, renal, pulmonary, or hepatic disease. (i) Because it may become twisted with the uterus as a pedicle, and must be removed immediately to save life; I have seen this once. (j) Because a very sensitive single woman, in good health and active, demands its removal on account of the disfigurement it causes. (k) Because the operation, today, in experienced hands, is almost uniformly successful.

4. In cases of uncontrollable complete prolapse, particularly after the menopause, when pessaries and all the usual operations for holding up the uterus have been tried and found useless.

5. In case of incurable chronic inversion.

6. In cases of infection when the removal of the Fallopian tubes affected with salpingitis has not cured the patient.

7. To cure puerperal sepsis where the diagnosis is as certain as it can be."

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PÆDIATRIC CLINIC. By W. S. Christopher, M. D.
*Professor of Diseases of Children, Chicago
Polyclinic; Professor of Pediatrics, College of
Physicians and Surgeons, Chicago.*

(Lecture delivered at the Chicago Polyclinic, Aug. 7th, 1897.)

CASE I. Gentlemen, this little girl, Theresa D., is the cretin that was brought in four days ago. The history of the case we took rather fully and found the following state of affairs: She is now five years and four months old, weighs $29\frac{1}{4}$ pounds, naked, is $31\frac{3}{8}$ inches high, looks as though she were two years old, and presents well-marked evidences of cretinism in the extremely stocky build (as shown by the photographs here), and the thick, heavy extremities, the pendulous abdomen, the lordosis and the sluggish mental condition. We also find in her nutritional history evidence from the feeding that she had during infancy an insufficiency of fat in her food. She was fed at the breast for six months, then upon condensed milk exclusively for two years. She likes fruit, meat and potatoes, and these have since been her principal articles of diet. The deficiency in the fat feeding, as shown by the history, is confirmed by the examination. For instance, she has such rachitic signs as a curvature of the spinal column, slight beading of the ribs and there is also a history of very slow dentition, her first tooth erupting at nine months, and all of them not until three years. She did not walk until she was twenty-two months

old, although in a case like this the delayed walking cannot be considered a rachitic sign for the reason that the condition of cretinism would also delay walking, cretinism resembling in many ways a prolonged infancy. She began talking at two years and is said to have talked well at three. We have noticed, however, that her expressions are poor at five, so that the idea of good talking is a mistake. There has never been any particular degree of sweating, which is quite in harmony with the observations of cretinism.

An interesting factor in this case is the presence of rickets. I do not think that I have observed before in cretins that rickets was present. There is no reason why rickets should be present in a cretin, it is purely accidental, rickets being fat starvation and cretinism being thyroid starvation. The two may occur concurrently, as in this instance, or they may not occur together.

The family history throws absolutely no light upon this case. Experience with cretinism in Switzerland indicates that heredity has something to do with it, but in these sporadic cases we get no evidence of heredity. The one feature of heredity, which refers to a mental condition, is the fact that her mother is now, and has been for two and a half years, insane. She is now 29 years of age and has been the victim of epileptic fits since she was 22. But there is no connection, probably, between her insanity and the cretinism of the child. Another interesting feature in this case is the low percentage of hæmoglobin; she only has 50 on the Fleischl scale, representing a very marked degree of anæmia. This likewise is hardly to be considered a feature of cretinism, but rather as an incident.

We have here two photographs of the child, one at six months of age and one at two and a half years. The one at two and a half years is an almost perfect image of the one taken a few days ago, and the father tells us she was then about the same size she is now. The one taken at six months does not show the cretinic features very well. Indeed it is extremely difficult to make a diagnosis of cretinism at so early an age. The child then presents an infantile appearance normally, and although we find that the mouth is slightly open we cannot say that the lips are particularly

thickened. I was anxious to get these early pictures in order to determine whether or not the hair grew low down upon the forehead, as at present it does. The picture at six months does not indicate such a condition, in fact, it appears there to be growing higher upon the forehead than it does today. The growth of the hair low down is one of the characteristic features of cretinism. I remember a case of cretinism which I accidentally diagnosticated at seven months of age; accidentally, because the features were not so well marked, but at seven months even the child was noted as slow, without much life, with a rather sallow complexion and failing to grow in weight, although fairly healthy at the time. The mother was quite anxious as she had lost a child under similar conditions a few years before. In that child, at seven months, the hair grew very low down on the forehead; it was an extremely well marked and prominent feature. But here at six months we do not find that the hair grows so low down as at five years. Whenever I see a baby with hair growing low down I follow its development closely, and watch carefully for other evidences of cretinism.

In the child just mentioned, in whom the diagnosis was accidentally made at seven months, the conditions were very obscure, and after trying several lines of management without success, I finally gave the child thyroid and found to my surprise and gratification that at the end of a few weeks it began to take upon itself a much more intelligent expression, and it began to grow and show signs of general development. This child is still under my care at three and a half years of age, and when I discontinue the thyroid it relapses into a distinct state of cretinism.

Cretinism is the result of a deficient supply of some material from the thyroid. Whether that be a material which goes to develop the brain and nervous system generally, or whether it be a ferment is quite immaterial. It is certain that this material, whatever it is, must be supplied continuously, and therefore it is a food. If this material is deficient, we can speak of the resulting cretinism as thyroid starvation. A deficiency of fat in the food of the infant leads to the development of rickets, a condition which is overcome when the fat is supplied, and which consequently

may well be called fat starvation. Similarly, cretinism becomes thyroid starvation. I think it well to use these terms, as they enable us to group under a more general term, viz., partial starvation, two such widely different conditions as rickets and cretinism.



Theresa D., aged 6 months.

Observation of these two pictures would indicate that the thyroid starvation was not present at 6 months of age at all but was present by the time the child was $2\frac{1}{2}$ years old. The difficulty of making the diagnosis from the picture will prohibit us from saying that this was, or was not, a normal infant at six months, but the absence of the low down growth of hair would probably indicate that it was, at six months, a perfectly healthy infant. There is no reason

in the world why the thyroid starvation which was distinctly present at 2½ years should necessarily have been congenital. Something in the development of the thyroid gland may have occurred in that time to have brought on this state of cretinism.



Theresa D., aged 2½ years.

We gave this girl four days ago one grain of Armour's dessicated thyroid daily. She has therefore had four doses.

Have you noticed any change in the little one?

"I have not."

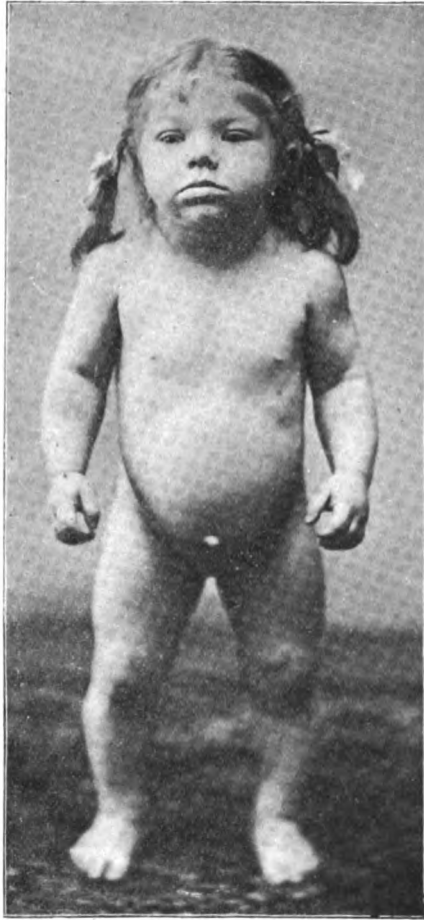
Has there been any disturbance of her sleep?

"No sir."

How have the bowels acted?

"The bowels did not act for two days. I gave her an injection yesterday."

Have you noticed her water?

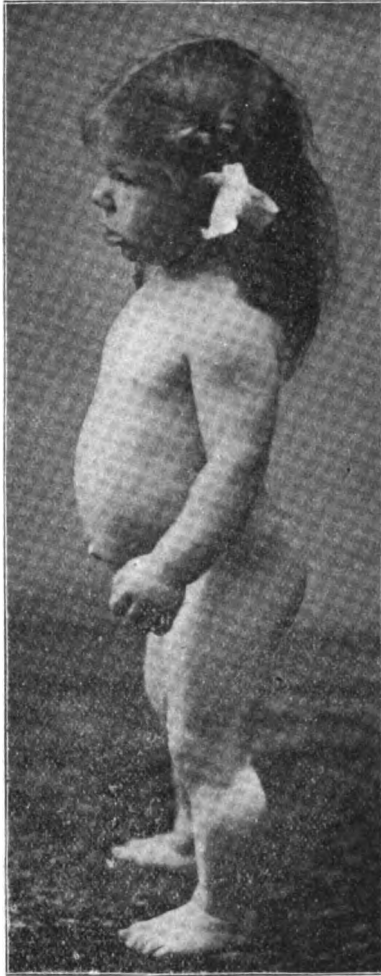


Theresa D., aged 5 yrs., 4 mos. Photograph taken Aug. 4th, 1897.

"I have not noticed anything particular."

The other day her temperature in the rectum was 97° , now it is 96.4° . Thus far we find the thyroid has not disturbed the child; elevation of the temperature would be one

of the first symptoms perceived. Therefore we will increase the thyroid to two grains daily, one at night and one in the morning.



Theresa D., aged 5 yrs., 4 mos. Photograph taken Aug. 4th, 1897.

NOTE.—Since the time of the foregoing clinic, Aug. 7th, until Oct. 14th, the child has received two grains of the Armour's dessicated thyroid daily. Her mental condition

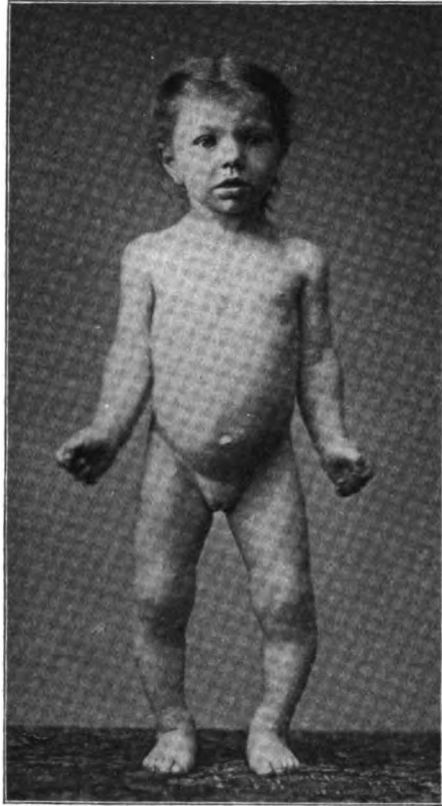
has improved very much, and her physical condition has likewise undergone considerable change. There has been some loss of weight, about two pounds altogether, and a marked change in facial expression. These changes are well shown in the pictures.



Theresa D., aged 5 yrs., 6 mos. Photograph taken Oct. 14th, 1897.

CASE II. This child is 2 years and 7 months old and is sent in from the eye clinic for observation as to his general condition, being treated there for phlyctenular keratitis. The history of the child is as follows: As to his heredity,

mother, maternal grandmother and grandfather are all living and well, except that the maternal grandfather has some heart trouble. The child's father has tuberculosis. The paternal grandmother is living and well, and the paternal grandfather died of Bright's disease. There is no other



Theresa D., Aged 5 yrs. 6 mos, Photograph taken Oct. 1st, 1891.

evidence of tuberculosis or rheumatic trouble in the heredity. The child resembles its mother. It was fed upon the breast exclusively for two months, then weaned abruptly and put upon malted milk for two months, then upon a mixture of raw cow's milk, two thirds, and water one third, which was continued until he was seventeen months of age. Since then his diet has been general, although he refuses to

eat meat, fruits and vegetables except potatoes. From this condition of feeding we see the marked deficiency in the amount of fat he has had. At birth the child was small, weight not known, but has grown well since then. His present weight is 30½ pounds, with his clothes on. His appetite is regarded as splendid. He is subject to diarrhœa and has never been constipated. His first tooth was cut at nine months and he now has twenty. He began to walk at nineteen months when measles occurred and interfered with his walking. He has always been more or less subject to croup. Perspiration has always been free, there is considerable deposit of fat and the skin has presented several kinds of eruption, such as eczema, heat rash and a general roughness. The mucous surfaces show a catarrhal condition; the nose runs frequently. The urine has always been dark and has stained the napkins. He has been the frequent victim of colic. His sleep is at present good but previously he has been very restless, and occasionally has night terrors. He often has little attacks of fever lasting a day or so, apparently without any discernible cause. At nineteen months he was exposed to measles and at the proper time developed a rash upon the face and body resembling measles.

The mother tells us that he had convulsions when he had measles, but upon closer inquiry we learn that between two and three weeks after the eruption of measles first appeared, and after the fever of measles had ceased, and when convalescence was progressing favorably, he was one night found in a convulsion, and that the convulsion recurred on the following morning. All the day before the first convulsion he was feverish, and fever continued for three days. While in the convulsion his left hand "worked constantly, but afterward he never raised it." The left foot, or rather lower extremity, was also involved, and now he uses the foot more freely than the hand. We obtain no history that would establish a diagnosis of diphtheria, yet evidently the throat was involved, as the mother says he could not eat for awhile and was nearly starved. Previous to his paralysis he was left handed, but now his left hand is very awkward, and has not as much power as the right hand.

Physical Examination. Bronchial glands normal; cervical glands normal; slight rachitic change in the spinal column; rachitic flares in the ribs; considerable beading of the ribs; cranium normal. There is no muscular contracture, no atrophy. There is a stiffness about the action of arm.

The case presents a number of extremely interesting features in our efforts to reach the totality of conditions of this boy. This is one of the cases which illustrates most beautifully the necessity of a complete history and a complete examination. Your attention has been called to the point that I consider it extremely desirable in many instances, though not in all, to determine from the standpoint of causation all the possible elements of deviation from the normal. We have considered in this case the factors of disease causation coming under the head of heredity, nutrition and infection, as well as having marked out the anatomical deviation from the normal, and principal abnormal functional manifestations. As we study this boy's heredity we find he has a considerable tendency toward the rheumatic or gouty diathesis, or arterio sclerosis condition. We find an absence of tubercular manifestation except in one member of the family, his father, but as his physical resemblance is maternal we have the right to hold tentatively that his heredity is more strongly maternal than paternal.

Now as we study his nutrition we find first that the history of his feeding shows marked fat deficiency. Second, that the physical examination confirms that; in other words that he has a slight rachitic condition, as shown by the bony deformities. And next, more important perhaps than this, is the fact that he shows the ordinary nutritional deviations of the gouty diathesis. That is to say, he has always been subject to croup, a condition of affairs which, while it occurs in rickets, is also common in these uric acid, or gouty children. Next he has had a free action of the skin, commencing earlier in life even than a rachitic sweating, and it bears upon the gouty condition. Next, he is subject to eruptions. Next, mucous manifestations, such as nasal discharges, are common. Next, his urine has always been dark and left a considerable stain upon the napkins. Next, he has been

subject to colic, a condition of affairs which, whether renal or enteric, is associated with uric acid troubles. Next, he has been a restless sleeper and has had night terrors. Next, he has been a victim of the so-called phlyctenular keratitis. These then show a uric acid factor in his nutrition.

I must also call your attention to the keratitis. Phlyctenular keratitis has long been recognized by ophthalmologists as a condition depending upon some dietetic or underlying nutritional condition. They treat these cases and they get well, but they recur. They have associated it with some form of malnutrition. It is our duty to determine what that form of malnutrition is. The gentlemen in the eye clinic have sent us quite a number of cases of keratitis for the study of the nutritional state and in the majority we find the so-called gouty, or uric acid, condition. Therefore, I should be inclined to speak of them as being equivalent to the herpetic state elsewhere and include them as one of the manifestations of the so-called uric acid diathesis.

Now, as to this boy's past infections. Measles is a danger point for any child with a tuberculous element in its heredity; but this child shows no evidence of enlarged bronchial glands, such as commonly occur in measles, and he shows no other evidence of tuberculosis. The hemiplegia which followed the measles has been almost entirely recovered from, and in the management of this case I should feel inclined to ignore the paralytic condition because there is already such marked improvement in it and anything we might attempt to do for it would probably not affect it one way or the other. The absence of atrophy and contractures and the slight spastic condition present, indicates that lesion causing the paralysis is cerebral. Cerebral palsies following acute infections have been often noted, and some of these have followed measles. But the relationship of the paralysis to the infection is still obscure.

In the management of the child I should be inclined to make a considerable attack upon the underlying uric acid diathesis because it is evidently the dominating feature or condition. He has no infection but he has with him always this uric acid diathesis. I should like to examine his urine

from time to time, if it can be collected, if not, the stained napkins, to see if we can diminish the urates formed and have them eliminated.

I would suggest to the mother to feed this boy, first, raw milk, if it is from cows known to be free from tuberculosis. We have here a child with a tubercular heredity and therefore we must pay especial attention to protecting him from possible tuberculosis, and milk is a prominent cause; therefore I should be particularly careful to put him upon a milk that is free from a suspicion of tubercular infection. Here comes a question—with his underlying diathesis raw milk sometimes produces trouble and cooked milk is better borne. It is a question whether he ought to be upon cooked or raw milk. That will depend upon the amount of uric acid trouble shown. We will ask the mother to put him upon raw, certified milk at first. Then we can allow cereals in all shapes, except oatmeal. The cereal should be thoroughly cooked. The potato is valuable to this child simply as a means of ingesting a large amount of fat in the shape of gravy or butter. Give him baked potato and put on it plenty of fat in the shape of gravy or butter, and salt as well. You must not give him any meat whatever, and no fish, but an occasional egg. If he will eat fruit give him pineapple juice occasionally, or an orange.

Then I want to give this boy internally four grains of bicarbonate of potash and about ten drops of the fluid extract of corn silk, three times a day.

I wish you would bring him back to us in a week, and bring some of his napkins so that we can see what progress has been made.

A BRIEF REPORT OF TWO INTERESTING CASES.

By Ralph Elmergreen, M. D., *Professor of Obstetrics, Milwaukee Medical College, Milwaukee, Wis.*

CASE I.—*Aneurism of temporal artery caused by trauma.*
F. B., age 27 years; mechanic.

While engaged in a baseball game he was accidentally hit by a hard and swift ball just above the right ear. His head soon began to swell, he felt dizzy and freely vomited for some time.

Under hot applications the swelling soon subsided, and, with the exception of a slight, pulsating dizziness, he was his usual self within a few days. Six months after the accident I saw him for the first time. A large pulsating tumor protruded from the right temple behind and above the ear.

He was very nervous, and had not slept for over a week on account of a throbbing pain in the head. He informed me that the "round swelling" had increased rapidly in size during the last few days, and that he had first noticed it four weeks after the accident, when it was no larger than a pea. It had since grown to the size of a hen's egg.

I had no difficulty in diagnosing aneurism of the temporal artery and advised an immediate operation. Under local anæsthesia, I proceeded that same afternoon to ligate the temporal artery. The tumor looked too threatening to permit any other treatment. On cutting down to the artery, an inch and a half below the aneurism, I found that the calibre of the vessel was more than three times the ordinary size, and pulsating violently through a very thin wall. While yet questioning the advisability of ligating such an artery, and attempting to ascertain by touch the strength of the outer tunic, the lower aneurismal wall suddenly ruptured and a stream of arterial blood shot forcibly upwards. It appeared as though no amount of pressure would check the hæmorrhage, and realizing that only an abnormality of tem-

poral circulation could possibly cause this uncontrollable bleeding I at once ligated the external carotid with good success. The patient lost a large quantity of blood, but rallied after a few hours under stimulants and made a good recovery. The patient was in a faint when the carotid artery was ligated and neither local nor constitutional anæsthetic was needed.

Moral: It is always well to look for surrounding circulatory peculiarities in operating for aneurism.

CASE II.—*Hystero-epilepsy due to pulling weight on ovaries.*

E. B., age 30, married; has not been well during the past four years. Subject to periodic "spells" (hysterical convulsions) at times of menstruation. She was in the habit of inhaling amyl nitrite during these attacks,—which generally relieved her. Bromides, assafoetida, morphia etc., were successively tried with no apparent relief.

Vaginal examination disclosed marked prolapsus of the uterus and left ovary. The former was enlarged with cervix torn and "ulcerating." The ovaries were both tender, but as the woman was very corpulent I was not able to express an opinion as to their integrity. For three months I put her under the routine palliative treatment, including massage, electricity, pessaries, tampons, posture and symptomatic treatment. She began to feel better but these "spells" were as severe as ever.

During all this time she suffered more or less from sub-acute cystitis with acute exacerbations. Sugar and albumen were never found in her urine.

Tired at last of her scolding about "that ring" (Hodges stem pessary) I advised an operation, to which she readily consented. I now put her to bed and after two days of preparation, amputated the cervix and performed ventro-fixation of the uterus. The result was all that we could wish for. It is now two years since the woman was operated and her husband informs me that his wife has enjoyed the best of health during that time, with no return of those "spells". She menstruates regularly and suffers no pain. Pregnancy, of course, in this case would be unfortunate, but

as the woman has living children and is not at all desirous of having more, with even indifferent precautionary measures, the probability of conception will practically be *nil* in this case.

In the amputation of the cervix, Skene's modified zigzag-flap operation was performed, which in my opinion is a great improvement on the usual methods, in practically doing away with all fears of subsequent stenosis of the internal os.

Milwaukee, Wis.

"Looking back over forty years of professional life, nothing surprises me more than the change which has come over the treatment of calculus. In my student days, to see Fergusson cut for stone by the lateral method was to witness an operation as near perfection as was conceivable, and the dexterity and rapidity with which the calculus was extracted were only marred by the frequency with which death from septic causes spoiled the skill of the surgeon. To have one's first lithotomy was an event in the life of the young surgeon, and every now and then a reputation was spoiled by some *contretemps* in the public performance of the operation. Later, I was the frequent witness of colleague Henry Thompson's skill in using the lithotrite to break up the calculus in a series of 'sittings.' Then came 'litholapaxy, or rapid lithotrity, which we owe to Bigelow, the great American surgeon; and, lastly, that recurrence of the old high or suprapubic operation which was due to the Scandinavian surgeon, Petersen. Hence the student of today rarely, if ever sees a perineal lithotomy, and as a consequence his interest in the anatomy of the parts concerned in the operation has greatly diminished."—Heath—*Address in Surgery, Brit. Med. Ass'n*, 1897.

CLINICAL LECTURES ON DISEASES OF THE
HEART, LUNGS AND PLEURA.—By Joseph M.
Patton, M. D., *Professor of Internal Medicine,*
Chicago Polyclinic.

MYOCARDITIS.

Myocarditis is a rare affection as compared with the frequency of other cardiac lesions.

Of late years myocarditis has not been so common a diagnosis as formerly. Many cases which were previously classed under myocarditis, belonged undoubtedly to the degenerations of the cardiac muscle. These two conditions are, however, so intimately blended, both in their ætiological and pathological relations that a clinical classification is not always possible, and even pathological classifications may be difficult owing to the mixed nature of the tissue changes. Any serious degree of myocarditis can hardly occur without some accompanying features of degeneration, and if this be true in a pathological sense, the clinical manifestations must present an even greater ambiguity.

There are, however, cases in which both the pathological state and the clinical symptoms are more clearly defined, and in which a definite diagnosis may be arrived at.

Myocarditis may be acute or chronic. It affects the left heart more frequently than the right. Either of these forms may be circumscribed or diffuse.

Circumscribed myocarditis of either acute or chronic nature will occur in connection with other pathological states, and is not to be diagnosed except under exceptional conditions. Diffuse myocarditis, either acute or chronic, is of direct clinical interest. The chronic form is much more frequent than the acute.

ÆTIOLOGY.—In association with other cardiac lesions myocarditis may be due to pericarditis, endocarditis or to sclerosis or embolism of the coronary arteries. Rheumatism may cause acute myocarditis, independently of other cardiac

diseases. Pyæmia and septicæmia may cause acute localized myocarditis (cardiac abscess).

Acute diffuse myocarditis may occur in connection with typhoid and typhus fever or acute ulcerative endocarditis.

Aufrecht claims that alcohol may cause myocarditis. The anatomical findings, however, by which he identifies the condition, are more those of a mixed sclerosis and degeneration, and the clinical picture is that of chronic degeneration of the heart muscle.

Chronic myocarditis may occur with all other cardiac lesions. The most frequent causes are rheumatism and nephritis. Syphilis may also cause myocarditis.

Chronic myocarditis may occur in connection with the vascular changes of senility. Arterial sclerosis and endo- and peri-arteritis are frequently associated with chronic myocarditis.

MORBID ANATOMY.—In acute myocarditis secondary to peri- or endocarditis the tissues adjacent to the primary inflammation alone may be involved. The muscular tissue is infiltrated with small cells, the fibres are softened and may have undergone granular degeneration or coagulation necrosis.

In the more diffuse forms, such as may occur with rheumatism or with prolonged high temperature from any cause, the changes are more general but affect the left ventricular wall more than the right. The nuclei of the fibres are large and prominent. Leucocytes infiltrate the tissues, and the change may assume the nature of "cloudy swelling," an initial step in the process of fatty degeneration.

These changes affect severely the contractility of the muscle and explain why there is such sudden and marked cardiac asthenia in these cases.

In acute myocarditis from pyæmia, single or multiple abscesses may form in the cardiac wall; these may rupture into the cavities of the heart or into the pericardial space.

Chronic myocarditis is characterized by the development of fibrous tissue between the muscular elements of the heart wall. The intermuscular septa around the blood vessels is the primary seat of this process.

Disease of the coronary arteries is most frequently as-

sociated with chronic myocarditis. Embolism or thrombosis of small branches of the coronary artery may cause the localized form.

When secondary to pericarditis, chronic myocarditis affects the external portion of the heart wall and both ventricles alike. When secondary to endocarditis it is the inner portion of the wall which is most affected and the left side is most frequently involved.

There may be small or large, single or multiple patches of induration, or there may be a diffuse fibroid development.

The loss of contractility of a portion of the wall through the development of a fibroid area may result in a cardiac aneurism. The favorite seat for these pouches is the apex of the left ventricle and the upper portion of the inter-ventricular septum. Rupture of the heart from this cause is very rare.

Syphilitic myocarditis occurs as grayish nodules or gummata, or as localized fibrosis, the latter not differing essentially from fibrous induration from other causes. General infarction may occur from the rupture of softened gummata into the heart cavities (Oppolzer).

More or less degeneration of the muscle fibre occurs in the region contiguous to areas of fibrosis, and the integrity of the heart is profoundly affected.

CLINICAL HISTORY.—The clinical history of myocarditis is unimportant. Neither the acute or chronic forms exhibit any history of value. A series of embolic accidents may, in the absence of endocarditis, be indicative of cardiac aneurism resulting from a patch of induration.

Pyæmic manifestations in connection with recently developed cardiac symptoms may indicate acute localized myocarditis (abscess).

Continuous high temperature in connection with any of the infectious diseases or with rheumatism may point toward acute diffuse myocarditis, where rapid loss of heart power occurs accompanied by dilation of the heart.

Chronic diffuse myocarditis presents the clinical history simply of ataxia of the heart common to other cardiopathies.

SYMPTOMS AND DIAGNOSIS.—*Acute circumscribed myocarditis* has no characteristic symptoms and cannot be diag-

nosed with certainty. Rapidly developed cardiac weakness, oppression, faintness, rigors, delirium, sudden appearance of a cardiac murmur, or sudden paralysis of the heart in connection with some infectious process, may indicate the nature of the trouble. Rühle says that the symptoms may be those of acute poisoning or of internal hæmorrhage.

Chronic circumscribed myocarditis can only be diagnosed when it results in thinning or pouching of the cardiac wall and the resultant aneurism is so situated as to be outlined by percussion or palpation. The changes that occur in the rhythm of the heart's action and in the nature of its sounds are of little diagnostic value as they cannot be distinguished from those which occur from degeneration of the muscle.

I think the statement that degeneration is less liable to exhibit cardiac enlargement than is aneurism, (M. P. Jacobi), is misleading. It is very rare for true cardiac aneurism to exhibit sufficient cardiac enlargement to enable a diagnosis to be made *intra vitam*.

Acute diffuse myocarditis is rarely recognized during life. The rarity of its occurrence, together with symptoms of a character common to other cardiac diseases, explain this. A rapid, feeble, compressible, irregular pulse, appearing suddenly during the course of some affection which myocarditis is liable to complicate, is the most important symptom. There may be dyspnœa and cyanosis, restlessness and anxiety, or delirium. The heart at first labors violently and the sounds are short and sharp; later the cardiac action is weak and the sounds are feeble and indistinct.

There are no special physical signs. Dilatation of the heart is generally present to some extent but cannot be readily determined.

Chronic diffuse myocarditis is the most common variety of myocarditis and from a clinical standpoint the most important, for, while the diagnosis is very difficult, it may be recognized early enough to render treatment of some avail. Rühle states that the clinical picture is that of a non-compensated valvular lesion, while Fraentzel says his cases have all exhibited failure of the lesser circulation as the first symptoms.

Exhaustion on exertion or excitement accompanied by

palpitation and præcordial pain are prominent symptoms. These attacks are, at first, quite transient, but later may become frequent and prolonged. They are apt to occur at night, especially attacks of cardiac asthma which resemble a true asthmatic paroxysm. The patient, however, will be much quieter than with an attack of bronchial asthma as the slightest movement increases his distress. The blood pressure during these attacks is high and in many instances the attacks are due to vascular contraction through excitement of the vaso-motor system. Transient pulmonary congestion and oedema may be present, but they are the result rather than the cause of the condition leading to the paroxysm.

The præcordial pain is irregular and of varying severity. The onset of the pain is not sudden and it may be merely a sensation of distress. The pain resembles the so-called pseudo-angina, or the *angina sine dolore*.

There may or may not be perceptible enlargement of the heart. The apex beat is weak and diffused. The pulse is rapid and irregular in both force and frequency. According to Rigal the pulse is regular, but in my experience, a rapid, irregular pulse which changes pace frequently without apparent cause, is one of the most characteristic features of this disease.

The heart rate may become so rapid as to constitute a *delirium cordis* (Rühle). Again, the pulse may be regular and of normal rate or even a condition of bradycardia may be present.

The character and quality of the heart sounds in chronic myocarditis are characteristic. The second sound is weak compared with the bulk or volume of the first sound, whereas, in most other conditions of cardiac weakness the second sound is relatively louder than normal. The variation in quality of the cardiac sounds is also characteristic. A few tones will be loud and snappy while the following sounds will be weak and indistinct,—a scarcely audible tic-tac. These sudden variations in rhythm and character of the cardiac sounds are more marked in chronic diffuse myocarditis than in any other condition involving dynamical failure of the heart.

These symptoms appearing in connection with vascular

sclerosis or chronic nephritis,—conditions in which we may expect those concomitant changes in the arteries of the myocardium which are the initial process leading to diffuse myocarditis, are strongly characteristic of the latter affection. Later on we have passive congestions and dropsy from general failure of the circulation. These symptoms differ in no way from the same manifestations of cardiac failure from other causes.

The following history illustrates a case of chronic diffuse myocarditis.

Man aged forty-six, single, moderate drinker, had two or three attacks of rheumatism during last ten years. Never confined to bed. Syphilitic history (?) Had severe attack of mountain fever one year ago. Subsequently suffered from præcordial pain, dyspnoea and insomnia; at times anorexia and vomiting. The dyspnoea and præcordial distress became more constant. At time of coming under observation was confined to house. Edema of extremities, congestion of liver. Suffered much from gastric derangement. Pulse irregular, from 100 to 150; heart sounds very much; second sound weak, first sound muffled and indistinct. Variation in rate of pulse sudden and frequent. The heart was enlarged from hypertrophic dilatation of left ventricle. Slight aortic stenotic murmur. The arteries were sclerotic and tension high. Improved under treatment for short time. Heart became more dilated and death occurred nine months after coming under observation.

Autopsy showed chronic endocarditis with aortic localization, hypertrophy and dilatation of both sides, sclerosis of coronary and systemic arteries, chronic diffuse myocarditis with fatty degeneration of fibres of heart muscle. The left kidney very small and firmly contracted. Right kidney slightly larger than normal and, beyond slight parenchymatous changes, was healthy.

The clinical diagnosis of myocarditis is difficult and rests mainly on exclusion of other causes than myocarditis for the abnormal condition of the heart. It is most apt to be confounded with the earlier stages of degeneration of the heart muscle.

In degeneration of anæmic origin and in fatty infiltration the ætiological relations will aid the diagnosis. In the toxic degenerations, such as occur with parenchymatous nephritis, enlargement of the heart is more pronounced, for

while slight hypertrophic enlargement is frequent in chronic myocarditis, it is never so prominent a diagnostic feature as the hypertrophic dilatation which is so conspicuous in many cases of parenchymatous nephritis.

The duration of myocarditis is variable. The acute form may last but a few days or weeks. The chronic form is of such insidious advent that its limitations are difficult to fix. The cases are usually well advanced before coming under observation, and their clinical history ranges from three or four months to two or three years.

TREATMENT.—The treatment of *acute myocarditis* is largely embodied in the management of the condition with which it is associated. Its occurrence brings a demand for stimulation and support to the heart. This must be active, as the demand is urgent and sudden. This indication is best met by alcohol, strychnia and ammonia.

When, in any condition with which acute myocarditis is likely to occur, we find the pulse becoming weaker, faster and irregular; the patient anxious and restless, we cannot wait for the action of digitalis. Moreover, digitalis is of questionable utility in these cases. Nitro-glycerine is not suitable and is dangerous. We must therefore rely on the remedies mentioned. Half ounce to ounce doses of whisky containing one-twentieth of a grain of strychnia may be given every two to four hours. Strychnia if used at all must be used in large doses for its stimulant effect.

One-half to one dram doses of the aromatic spirits of ammonia, or two to three dram doses of the liquor of the acetate of ammonia, may be used in place of, or in connection with, the alcohol.

Opium may be used very carefully to quiet the patient in case of great restlessness, as the disturbance incident to a delirious condition may be more dangerous than the amount of opium necessary to quiet the patient.

The patient must not be allowed to make a movement that can be obviated, as the slightest exertion may cause syncope.

Chronic myocarditis must be treated, first, with special reference to its ætiological relations; second, with regard to the condition of the systemic arteries and blood pressure:

third, with regard to the propulsive power of the heart itself. The main object is to improve nutrition and maintain elimination. If these processes are below normal then degeneration of the heart muscle fibres will progress rapidly and asystolism will soon develop. The elimination should be as closely studied as in nephritis, whether the latter condition be associated with the case or not.

If rheumatism or syphilis be the ætiological factor in the case, such relation to the disease should be kept in mind even though all manifestations of the basic conditions have vanished. If general sclerosis of the vessels be present, then the continuous administration of vaso-dilators is necessary, for very slight increase in intra-ventricular pressure will produce dilatation in a heart weakened by myocardial sclerosis. For this purpose nitrite of sodium (two or three grain doses), nitro-glycerine (one two-hundredth grain), or opium (two to five drops of the deodorized tincture), may be given three times daily. As to the heart itself, we must remember the great probability of imperfect coronary circulation, hence we give sodium iodide (five to seven grain doses) for its dilating action on the smaller arteries. Stychinia (one-thirtieth grain doses) should also be given. These drugs are suitable for all stages of the disease and should be continued for months. Digitalis is not well borne as a rule, but the weak, irregular heart, with præcordial pain is often much improved by strophanthus. Seven to ten drop doses of the tincture in aqua lauro-cerasi, combined with the doses of strychnia and iodide of sodium before mentioned, makes an efficient combination for these cases.

CARDIAC DEGENERATION.

Under the generic term *degeneration*, we include fatty infiltration, fatty degeneration (fatty metamorphosis), and granular degeneration (parenchymatous degeneration). While the morbid processes are essentially different, sufficient warrant is found for such a combined classification in the pathological fact of the inter-dependence of these processes and their mutual clinical association.

ÆTIOLOGY.—*Fatty infiltration* occurs in connection with a general increase of bodily fat resulting from disturbance

of the proper relations existing between food supply and oxidation. The factors in the production of this state are the excessive ingestion of hydrocarbons and lack of proper exercise with imperfect elimination. Fatty infiltration may occur secondary to fatty degeneration of the muscle fibre.

Fatty degeneration of the heart may be diffuse or circumscribed; it results from diminished blood supply, changes in blood quality from high temperature or poisons, and is part of the change incident to the decay of senility.

Fatty degeneration may be associated with all varieties of cardiac lesions as a result of the various ways in which they interfere with the nutrition of the heart muscle. Localized fatty degeneration results from the various forms of coronary obstruction, peri- and endocarditis, and in all instances where there is local interference with nutrition. It may be secondary to fatty infiltration and to the peri-vascular scleroses, both arterial and venous, which result from aortic and mitral lesions (Banti), in which connection it marks the beginning of actual loss of compensation. Diffuse fatty degeneration occurs from chlorosis, pernicious anæmia, tuberculosis, phosphorus and arsenic poisoning, and in all instances where the quality and quantity of the blood supplied the heart as a whole, is defective.

Granular degeneration, (parenchymatous degeneration). This form of degeneration is due to toxicity of the blood which may or may not be attended with high temperature. It occurs in the acute diseases and is frequently the initial step in the process which results in fatty degeneration.

Granular degeneration of the heart occurs from the auto-intoxications resulting from nephritic and intestinal toxæmia. Parenchymatous nephritis is particularly liable to be associated with this form of cardiac degeneration. Senator expressed this view indefinitely when he said that the hypertrophy of parenchymatous nephritis was eccentric, implying a concomitant degeneration of the muscle. The nature of the poisons resulting from renal insufficiency are very complex, and the associated cardiac lesions are correspondingly varied. The manner of development, however, of that cardiopathic state so frequently found associated

with parenchymatous nephritis, indicates a muscular weakness which can only be explained by the effect on the heart muscle of toxic substances.

MORBID ANATOMY.—Fatty infiltration is characterized by a more or less regular deposit of fat between the fibres of the heart muscle. Normally there is some fat beneath the visceral layer of the pericardium. It is usually found along the grooves between the auricles and ventricles. The fat may increase so as to completely cover the right ventricle. The left ventricle is seldom or never completely covered. The fat collects along the vessels and between the muscular fibres. It is more plentiful in the outer wall than towards the endocardium. In moderate infiltrations there are irregular collections of fat, while in advanced cases, the whole ventricular wall may have the appearance of a fatty layer, the muscular tissue being discernible only by the microscope.

The presence of fat between the muscular fibres interferes with nutrition and results in fatty degeneration of the fibres.

Fatty degeneration.—This form of degeneration is due to a metamorphosis of the protoplasm of the cells, and is, in a measure, a perversion of the normal physiological processes of cell life. The protoplasm of the cells is changed into molecular fat showing as minute granules, first in the protoplasm then in the nucleus.

This form of degeneration is met with in the heart more frequently than in other organs. It is associated, to a greater or less degree, with the advanced stages of nearly all cardiac lesions. It may terminate in absorption, caseation, calcification or softening. The advanced stages are only met with in localized forms of the disease.

The heart muscle is soft, pale and friable. The fibres lose their striation and contain granules of fat. According to Walsh the ventricles commonly suffer alike. Other authorities say that the left is most often affected, then the right ventricle, right auricle and left auricle in rotation. Loomis states that the auricles are affected alike.

The heart is usually enlarged, though this is apt to be due principally to some associated lesion. When diffuse

fatty degeneration occurs alone there is frequently a moderate simple dilatation of the heart.

In association with, and allied to, fatty degeneration we may have *brown atrophy* of the heart, in which there is atrophy of the muscle fibres with the formation of granules of pigment. It occurs in general marasmus, in senile conditions and occasionally with hypertrophy. It has no clinical significance.

Granular degeneration.—In granular degeneration the cells become swollen and their protoplasm granular. The nuclei and striation of the fibres are lost. The heart tissue is opaque, pale and soft. These changes eventuate in fatty degeneration. In the heart they occur in connection with other changes which together result in considerable enlargement of the organ. This may be mainly or entirely dilatation, as in post-typhoid, diffuse, granular degeneration. Again, in parenchymatous nephritis immense hypertrophic dilatation may develop in connection with the mixed forms of granular, fatty and interstitial changes which result from the auto-intoxication due to imperfect oxidation and elimination.

CLINICAL HISTORY.—The clinical history of the various degenerations of the heart is mainly that of more or less sudden loss of heart power, associated with those symptoms of disturbance of other organs which result from, and sustain the same ætiological relation to, the primary cause, as the heart lesion.

In *fatty infiltration* there is a history of gradual increasing shortness of breath, and a sense of oppression in the chest. Drowsiness is often a prominent symptom; the patient will go to sleep at all times, while sitting in a chair, and wake up suddenly without having been aroused, not realizing that he has been momentarily asleep. Fatty infiltration is seldom found before thirty years of age, and most often after fifty. It occurs in persons who exhibit the results of excessive and improper diet.

Fatty degeneration occurs in persons who are poorly nourished. In association with anæmia it occurs more often in women than in men, and in early life. The so-called idiopathic form is a disease of advanced life; it occurs most

often in men and is usually associated with disease of the coronary arteries. Fatty degeneration is a process so intimately associated with other cardiac lesions that the only form having a specific clinical history is that occurring with anæmia or the infectious diseases. Here the sudden development of heart failure in a profoundly anæmic state, or during or immediately after the height of an infectious process, is indicative of fatty degeneration.

Granular degeneration. In diseases attended with high temperature and systemic poisoning, signs of commencing heart failure may indicate granular degeneration. This condition may be recovered from before passing into a state of fatty degeneration. In parenchymatous nephritis the subjective signs of cardiac incompetency occurring within a short time (one to four months) of the probable onset of the kidney lesion, belong to the clinical history of this form of degeneration.

The occurrence of sudden death from degeneration of the heart is, in my experience, comparatively infrequent. Quain states that in fatty heart it is the most frequent mode of death.

SYMPTOMS AND DIAGNOSIS.—The symptoms of cardiac degeneration will vary with the ætiological associations. The one cardinal symptom is loss of dynamic power with or without cardiac enlargement, which, by exclusion is found to be due to muscular degeneration.

Fatty infiltration has no characteristic symptoms. There will be gradually increasing dyspnoea, slight cough, poor peripheral circulation, disinclination for mental or physical work, imperfect digestion and elimination and occasionally dizziness or a tendency to syncope.

The pulse is feeble, very compressible and is usually regular *when the patient is at rest*, but becomes rapid and possibly irregular also, on slight exertion. Later when degeneration of the muscle fibres is added to the infiltration, the pulse becomes more irregular and faster.

There may be slight enlargement of the heart, passive congestion of the base of the lungs, slight œdema of the limbs and the usual signs of failure of the left ventricle. The heart becomes considerably enlarged; the apex beat is

diffused and indistinct and is displaced relatively more to the left than downward.

Both heart sounds are weak, the second being relatively louder than the first. The physical sounds are essentially those of moderate cardiac dilatation, and the differentiation from dilatation due to other causes is largely one of exclusion. The area of cardiac dullness, and the disturbance of action, is greater in dilatation from degeneration than in dilatation from other causes.

Cheyne-Stokes respiration may or may not be present. It has been considered characteristic of fatty degeneration of the heart but may occur in the asystolic period of any cardiac lesion.

The following history is from a case of fatty infiltration:

Man aged 58. Height five feet, seven inches, weight 212 pounds. Gradual increasing dyspnoea for a year. Tendency to go to sleep while sitting in chair at his desk. Mental effort difficult, memory clear. Indigestion. Bowels constipated. Heart slightly enlarged, apex under sixth rib in mammillary line, impulse diffuse and weak. Sounds indistinct, second louder than first. Pulse, sitting, 86; standing, 94; after slight exertion, 120; varies in force, not in rhythm. Slight passive congestion at base of left lung.

Improved under treatment, went back to business.

One year later relapse from overwork. Extensive dilatation. Death in two months.

Autopsy showed dilated heart covered with extensive layer of fat. The right ventricular wall appeared entirely fatty, its muscular fibres showed fatty degeneration under the microscope.

Fatty degeneration is so directly associated with the period of failure of the heart muscle of nearly all cardiopathies, that it is difficult to individualize its symptoms.

In elderly people who have developed arterial degeneration, and in whom the coronary circulation and nutrition is gradually but surely diminishing, there will be general failure of nutrition as shown by the cold skin, which is yellow and dry, and the presence of the *arcus senilis*. The slow peripheral circulation, irritable temper, failing memory, rapid, irregular pulse, tendency to sudden dyspnoea with slight cough after exertion, or even without, indicate pro-

gressive degeneration of the muscle. The pulse is quick, and hard, if there be much arterial degeneration. It is irregular in force and rhythm. It may resemble the pulse of chronic diffuse myocarditis.

The heart is usually enlarged from combined hypertrophy and dilatation. The apex impulse is diffuse and may be in the sixth inter-space. When the degeneration is advanced the heart's impulse is weak and the apex difficult to locate.

In diffuse degeneration occurring with anæmia or the acute diseases there is rapid development of failure of the circulation with its attendant subjective signs, accompanied by rapid dilatation of the heart, as illustrated by the following history.

Woman, aged 41, sick eight months with pernicious anæmia. Treated with iron, arsenic and bone marrow without result. Blood count showed the red blood cells to be about two million per cubic millimetre and the oligochromæmia has averaged proportionally about the same as the oligocythæmia.

During the first month of her hospital life the pulse rate was from 95 to 100 per minute and regular. The heart was not enlarged when she entered the hospital. She gradually grew worse, pulse slowly rose to 140 per minute. Heart gradually dilated till left line of dullness was one-half inch farther to the left. Gastric disturbance, marked insomnia, dropsy of legs, failure of kidney action. Death. Autopsy showed fatty degeneration of heart muscle, dilatation of left and right ventricles.

Granular degeneration, as an initial process ending in fatty degeneration in acute diseases, may be suspected in case symptoms of failure of the heart in such connections are recovered from. Its chief clinical interest lies in its occurrence in connection with parenchymatous nephritis.

Along with the subjective signs of cardiac failure there is progressive enlargement of the heart which is due to combined hypertrophy and dilatation. A very considerable enlargement of the organ may be attained in from one to four months.

Dilatation resulting from dynamical failure, secondary to hypertrophy, could not develop in so short a time, hence

we have coincident dilation and hypertrophy which are concomitant with the kidney lesion.

The patient will suffer from oedema, passive congestion of the lungs and liver, cough, great dyspnoea, gastric distress, dizziness and faintness. The pulse, weak, soft and compressible, is usually regular, but may be irregular, and is not in proportion to the laboring action of the heart.

The heart may be much enlarged; its action is tumultuous. The apex beat is displaced outward and downward, its impulse is diffused and heaving in character. We do not get the direct, forcible, apex impulse of hypertrophy, such as is obtained with other forms nephritis, but rather the diffused motion and indistinct apex beat of the hyposystolic period of advanced cardiopathies. We have here a patient exhibiting this form of cardiac disease who has been under treatment in the clinic for two months.

Girl 16 years old. Five months ago had scarlatina; while convalescing developed acute nephritis; apparently recovered but did not regain strength. Developed shortness of breath, cough and oedema of the legs. Treated without relief. Appeared in clinic two months ago. At that time she suffered severely from dyspnoea and cough, could not walk across the room without great difficulty. Her lips and fingers were cyanosed. She could not lie down. There was extensive dropsy of the legs with passive congestion of the lungs and liver. Her pulse rate was 100-115 per minute. The heart's action was tumultuous and disturbing. There was a widely diffused area of cardiac motion. The apex was in the seventh interspace, one inch and a half outside of the mammillary line. The transverse cardiac dullness reached from one-half inch to the right of the right edge of the sternum, to one-half inch to the left of the left mammillary line, on the level of the fourth rib.

The first heart sound was muffled, the second sound intensified, particularly over the aortic valves. She was passing fifteen ounces of urine daily, which contained albumen and casts. She has improved so that now she can lie down comfortably, sleeps well, eats well, coughs but little, walks at a moderate pace without disturbance. The oedema has entirely disappeared, also the passive congestions. The heart has diminished one inch in its transverse measure, and though, as you see, there is still an exaggerated area of cardiac motion, she is not conscious of the heart's action when she is quiet.

TREATMENT.—The treatment of degeneration of the heart embodies those principles which are applicable to the hypsystolic period of all cardiopathies.

In fatty infiltration, if the integrity of the muscle is fair and degeneration has probably not set in, we should give special attention to diet and exercise.

The carbo-hydrates should be restricted and the patient kept largely on animal food. Specific directions should be given as to the amount, as well as kind, of food to be taken.

The meals should be taken regularly and the same amount of food at each meal; not over ten ounces of fluid allowed with the meal. Mineral waters should be given between meals, to promote elimination. Exercise must be carefully graded to suit the condition of the heart. Walking, light exercise, calisthenics of any kind which do not increase the blood pressure too suddenly, will answer. Thyroid extract has lately been recommended for fatty infiltration in connection with general obesity. It is probably of value but its definite contra-indications are not yet fully understood.

In more advanced cases where the muscle fibres of the heart are weakened from insufficient nutrition and we have a mixed infiltration and degeneration, we must keep the dynamic condition of the muscle in mind. Here exercise may do harm, for the increased blood pressure will favor dilatation. We have the same condition in the fatty degeneration of senility and the treatment is the same.

All active exercise must be avoided. This is governed by the pulse; if the pulse becomes rapid or irregular, or there is dyspnoea, then the exercise is harmful.

Passive movements and very light resistance movements may be of service when performed with care, but they are apt to do harm and are not of the same utility as in degeneration secondary to valvular lesions.

Nutritious diet is important. Iron, arsenic and strychnia are the tonics to employ. The latter is of special value; it should be given in one-twentieth grain doses thrice daily and continued indefinitely. A degenerated heart muscle will probably never overcome the necessity for strychnia.

Arsenic is of particular value in cardiac degeneration. Alcohol is not admissible in any form.

Digitalis must be used very carefully, if at all. In beginning asystolism with serious dropsy and passive congestions, the careful use of digitalis may be followed by good results. A good infusion from the English leaf is the best and safest preparation to use.

Acute degeneration occurring from pernicious anæmia, the infectious diseases or poisoning, is not susceptible of much treatment. Beyond absolute rest and the energetic use of strychnia, not much can be done.

In granular degeneration of the heart associated with nephritis, elimination and nutrition are important. The cardiac condition is due to toxæmia from kidney incompetence. If the daily percentage of urea eliminated is less than that converted from the food, then the cardiac degeneration must be progressive.

The nitrogenized foods must therefore be restricted, the liver and intestinal secretions stimulated, milk diet given, with fruits and non-starchy vegetables.

It is surprising how much better the functions of the heart are carried on in these cases when occasional stimulation is given the liver and bowels. A good combination for this purpose is a pill composed of three grains of mass hydrarg., one-half grain of euonymin, one-quarter grain of extract nux vomica, and one and one-half grains of the compound extract of colocynth.

Iron and strychnia are the best heart tonics for these cases. Arsenic is not well borne as a rule.

The best form of iron is the *mistura ferri et ammonii acetatis*. The tasteless tincture is also well borne.

The kidney lesion will require the use of such remedies as the diuretic salts of potash, strontium lactate, fluid extract of juniper, or Trousseau's diuretic wine.

Bouchard objects to potash as being actively concerned in the production of uræmic intoxication. We acknowledge that between its beneficial effect in promoting diuresis and its direful effect if not eliminated, there may be a therapeutic conundrum.

When dropsy and passive congestion are the features of the case special stimulation of the kidneys will be necessary, with such remedies as diuretin or calomel.

It is useless, however, to give these remedies with a very low blood pressure. The heart must first be stimulated and the blood pushed through the kidneys before these remedies can act.

Digitalis should therefore be given for three or four days previous to using special stimulation to the kidneys. The infusion is the best preparation to use. Tablespoonful doses may be given every four to six hours. To each dose may be added ten grains of acetate of potash, and two to five drops of deodorized tincture of opium as a vaso dilator.

Trousseau's wine is a very efficient combination for occasional use when the urine falls below twenty-six or twenty eight ounces per diem, and moderate combined stimulation of the heart and kidney is required.

Diuretin and calomel cannot be depended on in these cases as they can in the dropsies due to the passive congestion of the kidneys incident to valvular lesions. but they are always of more or less service.

I recently saw a man in consultation who was extremely dropsical from parenchymatous nephritis and toxic degeneration of the heart with marked hypertrophy and dilatation. After stimulation of the heart with digitalis the exhibition of diuretin and calomel produced such rapid elimination of water that the man went into a condition of collapse, with a pulse of one hundred and sixty, and was only revived by the introduction into his circulation of sufficient normal salt solution to restore the blood pressure.

Diuretin should be given in fifteen grain doses every four hours until eight doses have been given, and then stopped.

Calomel should be given in three grain doses three times a day for two days only, the bowels being kept quiet by five drops of deodorized tincture of opium exhibited half an hour after each dose of calomel.

When much degeneration of the heart has occurred we cannot hope for more than temporary relief, particularly owing to the fact that the cause—the kidney lesion, is progressive.

A CASE OF VILLOUS PAPILLOMA OF THE
BLADDER.—By Geo. W. Newton, M. D., *Professor of Gynecology, Chicago Clinical School, etc.*

The following case serves to illustrate the necessity of exploring the interior of the bladder before deciding that frequent and painful micturition of urine that is acid, contains epithelial cells, a few pus cells and triple phosphates, by a broken-down, nervous woman, is not due to a catarrh of the bladder or to a neurosis of that viscus.

Mrs. G., married, age 69. Has had five children, youngest 32. General health always fair, never seriously ill. Bowels constipated and loose alternately for the past twenty years. For the past three years has had to micturate too frequently but it was not painful until the middle of February last when suddenly she had severe pain in passing water. The frequent and painful urination kept up for two weeks before she consulted a doctor, who, after having found that the urine was acid and that it contained pus, a few blood corpuscles, epithelial cells and phosphatic crystals, diagnosed her case as one of acute cystitis which was being aggravated by a proctitis and hæmorrhoids. Accordingly the bladder was washed out and the hæmorrhoids were operated upon.

After a time the bladder symptoms improved so that she was comparatively comfortable, although the urine never flowed freely and there was also some pain in urinating. This condition existed for several weeks when she fell on a slippery sidewalk, hurting her head and back. Immediately thereafter her bladder symptoms were aggravated and a short time later she passed blood from the bladder very freely and also complained of the flow of urine stopping after it had commenced to run. At this time the pain in voiding her urine was most intense.

During this period I was called to see the case and sug-

gested that there was probably a growth in the bladder and proposed a cystoscopic examination. The examination revealed a pedunculated tumor situated at the base of the bladder a little to the right of the center. A few days afterwards, under the influence of ether, I dilated the urethra with Kelly's dilators and removed the tumor by grasping the pedicle with a pair of forceps and twisting it off. There was very little hæmorrhage. A microscopical examination showed the growth to be a villous papilloma.

The symptoms which suggested a growth in the bladder were the hæmaturia, the obstruction to the flow of urine and the amount of tenemus she complained of. It is well to remember that a small growth may excite a great deal of pain. Sometimes combined abdominal and vaginal palpation will aid in the diagnosis of bladder growths.

The after treatment consisted in washing out the bladder daily with boric acid solution to control a cystitis which the presence of the growth had excited. Three weeks after the operation she was very comfortable.

That this patient had this growth when she first consulted her doctor I believe to be true and had he examined her with a cystoscope he would have found it. That the symptoms were at that time intensified by the proctitis and hæmorrhoids I also believe and he did well in curing them; but this case surely teaches us not to treat cases of bladder diseases blindly when we can now so easily explore the interior of the organ.

CLINIC IN LARYNGOLOGY AND DISEASES OF
THE CHEST.—Service of E. Fletcher Ingals,
M. D., *Professor of Laryngology and Diseases of
the Chest, Rush Medical College, Chicago.*

CASE I.—Man aged 39; married; blacksmith by occupation. Has had a family of two children; one dying at 3 years of meningitis, the other at 6 months of "spasms".

The man is fairly well developed—though not as much as one would look for considering his calling. He has a good appetite, and says he never was sick until a year ago, when he suffered an attack of pleurisy which lasted about two months. He recovered, however, from that sickness, although he says he does not weigh as much by about twenty pounds as before his illness, and probably is not quite as strong physically.

Seven weeks ago what he calls "canker sores" appeared in his mouth, and have troubled him more and more ever since. His mouth constantly pains him, and he finds it difficult to eat. Upon examination I find a large, irregularly-shaped ulcer on the dorsum of the tongue to the right of the central line.

The ulcer has a clear-cut and somewhat elevated border, and the central portion is about 5 m. m. deeper than the outer part. It has a pulpy appearance; has an indurated base, and in three or four places fissures extend out into the surrounding, engorged, but otherwise normal-appearing structure of the tongue.

Examining the larynx with reflected light I find another ulceration marking the left portion of the arytenoid cartilage, being superficial in character and not showing any markedly distinctive features. There is no ulceration of the fauces, but I find the uvula somewhat congested, about 5 per cent, I should say. The base of the tongue appears normal; but there is a small ulcerative patch on the epi-

glottis. The arytenoids are but little swollen. The vocal cords are natural, and the throat otherwise normal.

The patient has a pulse of 133 at the present moment; and has lately had a daily temperature of 101°. The ulceration of the tongue has rapidly extended, and I find that the laryngeal ulcerations have developed within the past two weeks.

There is something exceedingly suggestive of specific disease in this case, although there is nothing in the history pointing in that direction, indeed the history would if anything lead us towards a tubercular foundation for the man's disease.

You should remember that it is often very difficult from the appearance of an ulcer in this location to determine between syphilis and tuberculosis. The constitutional symptoms and the history must then be greatly depended upon to clear away uncertainty. We must consider that this man had pleurisy not long ago, and that many authorities regard pleurisy as of tubercular origin in the majority of cases.

Then we know that tuberculosis of the larynx is very frequently associated with pulmonary tuberculosis, but it almost always succeeds the pulmonary manifestation. In but few instances have I observed tuberculosis of the larynx without evident signs of tubercular infection within the chest.

Then again the tubercular ulcer is of much slower growth than we find to have been the case here. I certainly never saw a tubercular ulcer develop to this degree in so short a time. We also usually have considerable swelling of the larynx with tubercular ulceration, as well as a good deal of pain—present to a degree in this instance, to be sure—and a more or less marked cachexia, and, as I said before, unmistakable evidences of tubercular infection elsewhere. Yet it is often difficult to distinguish between a specific and tubercular ulcer, and you must be prepared to have your keener diagnostic qualities tested in some of these cases.

I have spoken of the association of tuberculosis of the larynx with tuberculosis of the lungs, making the statement that the former but seldom occurred without the latter. Let

us now look to the chest in this patient's case. I find resonance to be equal on the two sides, and normal in character. I further find that the respiratory sounds while somewhat harsh, are alike on both sides, and there is nothing of a physical nature to indicate that this man has pulmonary tuberculosis.

Some one suggests that the affection of the tongue may be cancerous. No, for bear in mind the involvement of the larynx, the rapid development, and superficial character and the absence of a diathesis or inherited tendency.

Treatment. In accordance with the suspicion mentioned I will advise this patient to be put upon the iodides. Let him start with ten grains of the iodide of potash, in water, three times daily, after meals. We can increase the quantity or not, according to the result we find in the course of a week or two.

Locally I shall expect much from the use of tincture of iodine. I have found nothing of such value as this agent in specific ulcerations when properly used, and the method of its use is to a considerable degree, I believe, the secret of its success in my hands.

The point of ulceration should be touched several times at each sitting. What I mean is that the application should be made from three to a dozen times at, say, minute intervals, until the ulcerated surface presents a dark brown color. A deep and thorough impression should be made, and the treatment should be repeated daily for ten days, then once in two days for a week, and afterwards at longer intervals, until the healing is completed. I shall look for healing in this case in about fifteen days under the treatment indicated. Another local agent I sometimes use is a twenty-grain solution of sulphate of copper.

CASES II, III, AND IV.—These cases are grouped because they present merely differing degrees of the same affection. All are women; all are young; all present a more or less negative history; and all can be prescribed for quite alike. All of these are well-marked instances of enlargement of the thyroid gland.

The first young lady is 21 years old, and first noticed the enlargement two years ago. Upon measurement I find

the largest diameter of her neck to be $13\frac{1}{4}$ inches. The growth here is noticeable, but not marked. The patient has always resided in Chicago, and knows no reason why this condition should occur.

The second patient is 19 years of age, and has been aware of an enlargement of her neck for about a year. She is of slight build, and we find a measurement of $12\frac{1}{4}$ inches over the most prominent part of the neck, the enlargement being more marked upon the right side. This patient is also a Chicago resident.

The third case is a woman, aged 18, who has felt the extra size of her neck since she was thirteen years old. She seems of robust health, and I find that her neck measures 16 inches over the largest part.

Treatment—The treatment of this affection in its simpler nature has undergone quite a radical change during the past few years. I used to employ the deep injection of a 3 to 5 per cent. solution of carbolic acid, using twenty to thirty minims at a time. In some cases I would also use an ointment of the red iodide of mercury, two drams to the ounce of simple cerate, rubbed over the enlargement each night until considerable irritation was produced. Many practitioners formerly employed the tincture of iodine locally, along with iodide of potassium internally,—no doubt many still use these means.

During the past few years, however, the use of thyroid extract has been found to give better results, and this plan has proved very beneficial under my observation. I use two grain tablets of dessicated thyroid three times daily, gradually increasing the quantity to three grains and later to four. No local treatment is resorted to.

This is the plan I will recommend for these patients, and I shall look for a speedy reduction of the tumor.

CASE V.—Man aged 60. Has been sick about six months, during which time he has had fever and has lost flesh rapidly. He coughs a great deal and lately has been expectorating about five ounces of muco-pus daily. He is suffering pain and dyspnœa, is much depressed physically, being brought here on a bed, and shows every evidence of being a very sick man.

Physical examination discloses normal resonance on the left side of the chest and a fair resonant sound anteriorly on the right side down to the sixth rib when he is recumbent, but only to the fourth rib when he assumes the sitting posture.

I can readily give a provisional diagnosis of purulent pleurisy in this case. I say provisional, because one is not justified in being too positive, even with very strongly suggestive symptoms, until an exploratory puncture with an aspirating needle has been made. The patient is in such a weak condition and the demand for relief so decided that I shall have an anæsthetic given at once, then use the aspirating needle and do a radical operation if a purulent pleurisy is found—which I doubt not will be the case.

I advise the use of ether in this instance because of the very weak state of the patient's physical powers; and I also admonish the anæsthetist to be especially watchful in bringing the patient under gradually. The age of the man; the limited respiratory power; the long-existing suppurating process and the prostration generally tells us to go carefully.

In this case I shall do a resection of a portion of a rib.

The patient now being ready I plunge the needle of this small aspirating syringe into the seventh interspace on the right axillary line. Drawing the piston about half way out we see the barrel of the instrument at once fill with pus, thin and dirty yellowish.

Without sacrificing any time I make an incision three inches long immediately over and in line with the seventh rib in the midaxillary line. I go right down to, and then through the periosteum which is then reflected back from all of that portion of the rib I propose to remove. The periosteum from the under surface of the rib is removed with a bent spatula. An aneurism needle is a good instrument for this purpose. Having accomplished this I take a pair of heavy bone forceps cutting at right angles to the grasp, and am able to quickly remove about one and a half inches of the bone.

A large, double, rubber drainage tube is inserted and fastened.

A dressing of iodoform gauze will be placed over the

part, and I will order the pleural cavity washed out daily with a saturated solution of boric acid.

CASE VI.—Here is a middle-aged man complaining of hoarseness and dyspnœa. He says that a year and a half ago he had the first attack of this trouble, partly recovering therefrom until last June when he noticed that his voice was steadily growing weaker. Ten days ago he began to have marked dyspnœa, which also gradually increased and finally brought him here for relief. The difficulty of breathing is as pronounced as that of a child with a sharp attack of croup.

I find an indefinite syphilitic history in the case, not strong enough to place it certainly under that head, but strong enough to be suspicious and put us on our guard. Upon examining the throat I find no swelling of the larynx, but the arytenoids are almost together, there being but a slight chink between the cords. There is not much difficulty in expiration, but upon inspiration obstruction is increased. The man's phonation is only fair.

The diagnosis would lie between paralysis of the vocal cords and ankylosis, but I find the latter can be excluded.

In cases like this of bilateral paralysis of the abductors it is necessary to do something promptly, and therefore when I first saw the patient two or three days ago, intubation was recommended.

A small sized adult O'Dwyer tube was first employed, and the size gradually increased up to a No. 5, which he wore for a time and then coughed out. The hospital interne had been instructed to reintroduce the tube in the event of it being expelled by coughing. This he found he could not do and Dr. Rhodes was called. The tube was replaced and the patient instructed to push it back in case he found he was about to cough it out. He tried to do this yesterday, but did not succeed very well, getting the tube in the œsophagus and swallowing it. We now have another tube in place.

I do not look upon the prognosis in this case as unfavorable. If we were dealing with a syphilitic stenosis the prognosis would be somewhat different and the treatment would probably require tracheotomy. I shall put this patient upon the iodides and large doses of strychnia.

The patient was kept on a diet of mashed potatoes for two days when the tube that had been swallowed was evacuated.

Notes and Comments.

Functional cardiac disorders, amblyopia, tremor, vertigo, neurasthenia, some forms of neuralgia, rarely angina, epilepsy and various psychoses are given by a late writer as in some instances being directly traceable to the use of tobacco.

* *

Dr. M. Thorner, of Cincinnati, in a recent paper upon the most serious forms of epistaxis, mentions four instances of the trouble so severe that it was necessary to tie one or both carotids, two of the cases proving fatal.

* *

It is held by Dr. J. T. Neech, after observing in an English fever hospital the duration of the period of infectiousness, that the minimum period of isolation in the ordinary case of scarlet fever, viz. six weeks, is not sufficient. He believes that period too short, even in mild cases, and where desquamation appears to have been completed. And in regard to the matter of desquamation itself he says: "I am not certain that the completion of desquamation is a safe and reliable guide as to when a given patient ceases to be infective even in cases where no complication arises."

* *

A very practical note—one that appeals to the everyday practitioner—is one found in a late article from the pen of Dr. L. Duncan Bulkley of New York on the non-surgical treatment of ordinary furuncles. This particular note reads:

"The objects aimed at by the treatment are, first, soothing and protecting an inflamed area; secondly, exclusion of air; and, thirdly, a slight antiseptic action. For this purpose a moderately thick layer of absorbent cotton is taken, several times the size of the inflamed surface: for a medium-sized boil a piece 1 by 2 inches, with the fibres running the long way. Upon the centre of the cotton a considerable

mass of the following ointment is spread by means of a spatula, and this is then laid over the boil, and held in place by strips of adhesive plaster across the ends, but not passing over the boil. The ointment referred to is generally composed about as follows: R Acidi carbolici gr. v-x; ext. ergotæ fld. ʒj-ʒij; pulv. amyli ʒij; zinci oxidi ʒij; unguent. aquæ rosæ ʒj. M. Ft. unguent. The relief often given by this dressing is very marked; the ointment soothes and protects the irritated surface, while the layers of cotton take up any outside friction. If comfortable, and unless disturbed, this dressing remains untouched twelve or more hours, when it is removed and a freshly spread piece immediately reapplied. If there has been any discharge the surface may be very gently cleansed with absorbent cotton, but I do not allow any squeezing. In many instances with proper internal and general treatment the boil aborts, and subsides without discharging; when this does not happen it ruptures spontaneously in a relatively short time, and I practically never find it necessary to incise it. This treatment I use in all stages of boils, keeping the ointment on until the boil is quite healed. If other boils form I direct it to be applied early and by this means they are frequently aborted. I wish I could express in a measure some of the delight expressed by patients when thus dressed in the comfort and relief obtained, as compared with the sensations and results from other treatment which they have previously had."

* *

The number of investigations in physiology and its allied sciences now made in this country has grown so large that the present means of publication are no longer sufficient. Physiologists can no longer print in foreign countries, often in foreign languages, or in general medical journals, without stunting a growth, which, unchecked, will come to be a gratification to every American, and a wholesome influence in American medicine. To meet the needs of investigation in physiology, physiological chemistry, physiological pharmacology, bio-chemistry and certain other branches of biology, a special journal will be published, the first number appearing in January, 1898. The *American Journal of Physiology*, as the new publication will be called,

will contain in each volume about five hundred pages, divided into parts or numbers, to be issued whenever material is received. It is expected that not more than one volume a year will be printed. The *Journal* will be edited by H. P. Bowditch, M. D., Boston; R. H. Chittenden, M. D., New Haven; W. H. Howell, M. D., Baltimore; F. S. Lee, M. D., New York; Jacques Loeb, M. D., Chicago; W. P. Lombard, M. D., Ann Arbor, and W. T. Porter, M. D., Boston.

It is not to be supposed that a journal devoted solely to the original researches in physiology will ever do more than pay for its paper and printing, and it is probable that some years must pass before the new enterprise will cease to be a burden on a small number of investigators. Yet the need of such a publication is undoubted. The aid of all friends of learning is asked until the journal shall be established on a self-supporting basis. The subscription price, which is five dollars per volume, should be sent to W. T. Porter, M. D., 688 Boylston street, Boston, Mass.—*Bos. Med. and Surg. Jour.*, October 21.

* *

A statement was made not long ago by a writer in the *Medical Record* that tape worm was seldom found in man, seeming to be an affection almost absolutely of womankind alone. This statement did not long remain uncontroverted, and cases in abundance were cited of the *tenia solium* and *tenia saginata* in man. Then Ch. W. Stiles, medical zoölogist of the Bureau of Animal Industry at Washington came forward with some statistics from several sources and which he placed together in the following table:

CASES OF TAPEWORM IN MAN.

Total Number of Cases Reported.	SEX OF PATIENTS		Authority.
	Female.	Male.	
173.....	117	56	Wawruch.
247.....	151	96	Crisp.
26.....	16	10	Seeger.
240.....	129	111	Monti.
10.....	7	3	Roger.
367.....	241	126	Krabbe.
1,063	661	402	

Of particular interest in connection with the case of cretinism reported in this number by Dr. Christopher is an article by Osler in the current issue of the *Am. Jour. Med. Sci.* Dr. Osler's language is certainly full of enthusiasm over the thyroid treatment of this disease when he says:—"Not the magic wand of Prospero, or the brave kiss of the daughter of Hippocrates ever effected such a change as that which we are now enabled to make in these unfortunate victims, doomed heretofore to live in hopeless imbecility, an unspeakable affliction to their parents and to their relatives." And desiring to give full credit to the one discovering this wonder-producing agent the same writer says, a little farther along:—"And here the thought arises, whom has suffering humanity to thank for this priceless boon? As with many great discoveries, no one man, indeed, no set of men. The points in the development of our knowledge of the function of the thyroid gland have been worked out in almost equal shares by physicians, surgeons and physiologists. Gull and Ord, Kocher and the Reverdins did much; but to the experimental physiologists, in particular to Schiff, to Horsley, and to von Eiselsberg, we owe directly the experimental evidence which made possible the successful treatment of myxœdema and sporadic cretinism."

* *

The introduction of antiseptics and the earlier stage of operation have greatly reduced the mortality in strangulated hernia, the latter being, perhaps, the much more important factor. In the pre-antiseptic era some 30 to 50 per cent. of cases were fatal. Dr. Oscar Hengeller (Zürich) has collected 1,491 cases in the last fifteen years, and finds the mortality to have been 16.5 per cent. Of nearly 300 cases, with a mortality of over 23 per cent. the majority were females, and most occurred between the ages of 50 and 70; laborers being particularly prone to strangulated hernia on the one hand, and child-bearing women on the other hand. Lipomata were present in 9 per cent. of cases. In 12 cases the gangrenous or suspicious-looking bowel was resected with a mortality of over 60 per cent. All the obturator and half the umbilical cases died. Mortality is in direct ratio

to the duration of strangulation. Of those operated on within 24 hours only 8 per cent. died. It is, indeed, probable, that earlier operation is the cause of the diminishing mortality; this must be obvious from the following facts given by the author, which would be ridiculous in the extreme if antiseptic and aseptic treatment were the sole cause of the diminished mortality; 1881 to 1885, carbolic acid used, 38 per cent. died; 1885 to 1893, bichloride used, 21 per cent. died; since the introduction of aseptic methods only 16.3 per cent. died. Does the author suggest that by using carbolic acid the mortality will be nowadays twice as great as by the aseptic method?—*Hospital*, October 9.

* *

Dr. James G. Kiernan, of Chicago, in speaking of *Transformation of Heredity* in the *Annals of Hygiene* (Oct.) cites a remarkable instance of hereditary degeneracy. He mentions the instance in these words:—

“The family originated in the Eastern States, but has branches south and westward. A farmer lived twenty miles distant from his nearest neighbor, whose only child he married. The daughter had led a lonely life till her courtship at the age of twenty-eight by the farmer then three years younger. The farmer married her for \$200, after having impregnated her. He then found lead on his farm, and went to a city. A stock company bought his farm and launched him into the stock market, where he made money, more as cunning tool than adventurer. He became a high-liver, gouty and dyspeptic, and died from gouty kidney at seventy. The couple had five children. The eldest, a son, became a ‘Napoleon of Finance,’ inherited his father’s cunning, and died wealthy within the pale of the law. He married a society woman, the last scion of an old family. The second child, a daughter, was club-footed and early suffered from gouty tophi. She married a society man of old family who had cleft palate. The third child, a daughter, had congenital strabismus. She married a man who was suffering from irregular migraine. The fourth child, a daughter, was normal. She married a thirty-year-old active business man in whom ataxia developed a year after marriage. The fifth child, a son, was ataxic at eighteen. The scions of the

'Napoleon of Finance' and the society woman were an imbecile son, a hysteric, a female epileptic who had a double uterus, a nymphomaniac, and a society man who wrote verses. The cleft-palated society man and club-footed woman had triplets born dead, and a strabismic migrainous son, who, left penniless by his father, married his cousin, the nymphomaniac daughter of the 'Napoleon of Finance,' after being detected in an intrigue with her. The migrainous man and strabismic daughter of the farmer-stock broker had a sexual invert masculine daughter, a daughter subject to periodical epistaxis irrespective of menstruation, as well as chorea during childhood, a normal daughter, a deaf-mute phthisical son, a cloacal daughter, an ameliac son, a cyclopic daughter born dead, and a normal son. The sexual invert married the versifier son of the 'Napoleon of Finance.' The progeny of the normal daughter of the farmer-stock broker and the ataxic man were a dead-born sarcomatous son, a gouty son with early tophi, twins boys paralyzed in infancy, twin girls (normal), a normal son, and a son ataxic at fourteen. The progeny of the nymphomaniac and her strabismic migrainous cousin were a ne'er-do-well, a periodical lunatic, a dipsomaniac daughter (who died of gastric cancer), deformed triplets who died at birth, an epileptic imbecile son, a hermaphrodite, a prostitute, a double monster born dead, a normal daughter, and a paranoic son. The ne'er-do-well married his epistaxic cousin. The gouty son of the farmer's normal daughter married the hysteric daughter of the 'Napoleon of Finance.' They had a son born with unilateral asymmetry, a prostitute, dead triplets, a male sexual invert, a color-blind daughter, and a normal son. The color-blind daughter married a paranoic grandson of the 'Napoleon of Finance.' The progeny of the sexual invert and the versifier (who were soon divorced) were a periodical nymphomaniac who had some artistic and literary talent, and a son who died of gastric cancer. The scions of the ne'er-do-well and the epistaxic woman were a moral imbecile, a 'bleeder,' a stammering daughter who had uvula deformity, a deaf-mute cryptorchid, dead-born triplets, an infantile paralytic son, and dead-born quadruplets. The progeny of the paranoic and his color-blind cousin were an exophthalmic daughter, an epileptic cryptorchid, a cleft-palated imbecile with a cloaca, dead-born quadruplets, an idiot boy, and a 'bleeder.'"

Book Reviews.

THE MENOPAUSE, A Consideration of the Phenomena which Occur to Women at the Close of the Child-bearing Period, with Incidental Allusions to their Relationship to Menstruation. Also, a Particular Consideration of the Premature, Especially the Artificial, Menopause. By ANDREW F. CURRIER, A. B., M. D., New York City. New York. D. Appleton & Company, 1897.

In this neat volume of 309 pages the writer reviews the subject briefly but scientifically from the modern point of view.

The first chapter takes up the views entertained by the ancient, and also more modern, writers concerning the physiology and pathology which characterize this period.

Chapter II deals rather exhaustively with anatomical changes affected by the menopause.

Chapters III and IV deal with the modifying influences upon its advent and progress. The author points out the characteristic phenomena in health and disease, also the influence of climate, heredity, habits and occupation.

Chapter V, "Premature Menopause," takes up briefly the various conditions which may be followed by an early arrest of menstruation and deals more fully with the subject of premature menopause resulting from traumatism.

The "Menopause Surgically Induced" is briefly discussed setting forth the opinions of the more recent writers on this subject.

In the last chapter (VII) it is to be regretted that not more is said under the head of treatment.

The reader would be profitted if this chapter dealt more fully with such directions for hygienic and therapeutic measures as might be deduced from the previous chapters on the anatomy, physiology and pathology bearing on the subject of menopause.

On the whole, however, the work is a valuable contribution, in which the author has avoided too many wearisome

statistics—dealing with facts viewed from a modern standpoint and dropping prejudices and traditions which have been fostered even in medical literature altogether too long.

The type is clear, and the general arrangement of the treatise is neat and systematic.

M. J. M.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By JAMES M. ANDERS, M. D., Ph. D., LL. D., Professor of the Practice of Medicine and of Clinical Medicine in the Medico-Chirurgical College, Philadelphia; Attending Physician to the Medico-Chirurgical and Samaritan Hospitals, Philadelphia; etc. Illustrated. Philadelphia. W. B. Saunders. 1898.

In a general way this new candidate for professional favor in the book world may be said to particularly and decidedly enjoy the advances and distinctive teachings which belong to the very last years of the nineteenth century. A turning of its pages shows at once that it stands out more strikingly as an advanced work than any of its contemporaries,—counting as contemporaries the flood of works on practice that have appeared during the past two or three years. What is meant by this statement is well indicated in going over, for instance, the attention devoted to bacteriology wherever that recent science appears to have any connection or bearing upon disease processes; in the employment of diagnostic tables, or tables marking the chief diagnostic features of similar diseases—not a new plan at all but one that is commendable and pertinent to this era for the sake of perspicuity if none other; in the very considerable use of definite prescriptions all throughout the text—a plan that had somewhat fallen into disfavor since the time of Bartholow, and which belonged in a measure, or was the outcome of, the spirit of “therapeutic nihilism” of which so much has been said and written; in the attention devoted to the different subjects encompassed by a treatise on the practice of medicine, and in the changed classification demanded by the light of present day knowledge.

These points in a general way characterize this very late work on medicine.

In a special way we note the following features.

The treatment of typhoid fever is especially full and rich, and the description given of the disease as a whole is interesting and thoroughly pursued.

The chapter on malarial fever is likewise complete and is embellished by two colored plates showing corpuscular changes.

We naturally turn with interest to the treatment of diphtheria, wondering what the *text-book* testimony in regard to antitoxin will be. We find the very first words under antitoxin treatment are:

"This has now passed beyond the stage of uncertainty and experimentation, and must be regarded as one of the most positive advances made in practical medicine."

A good outline of the serum treatment is then given, and a summary of the late report of the American Pediatric Society's investigation is quoted.

Tuberculosis is treated by Anders under the general infectious diseases, and the forms of the disease are there found described. For instance, while pulmonary tuberculosis is a disease of the lungs and has always been described under the classification of diseases of the lungs, here it is found under the infectious diseases and along with the portrayal of tuberculosis of other parts and organs of the body.

Wood and Fitz, in their work issued in the early part of this year, make the same distinction, yet the change is a novel one and means that our classification of diseases is undergoing a great alteration co-incidentally and depending upon an increased knowledge of basic etiological factors. Let us say right here that, speaking of Wood and Fitz and their classification—which was an advanced one—we find that a comparison of the two works upon this matter of classification of infectious diseases brings out the fact that Anders counts lobar pneumonia, acute and subacute articular rheumatism, gonorrhœal arthritis, actinomycosis, anthrax, hydrophobia, milk sickness (and a number of diseases which, while infectious, are yet of unknown etiology) as infectious diseases, being an addition of that number to the list as presented by Wood and Fitz.

This, of course, does not absolutely represent the advance in bacteriologic dogma of the past few months, as individual opinion, and the length and breadth of a wholesome doubt or conservatism, has not a little to do with the creation of a nosological table.

It is with a sense of peculiar satisfaction that we observe the author's teaching in turning to the controversial subject of the treatment of appendicitis. There is such wholesome advice, *in the interest of the patient*, that we are tempted to quote the author's exact words forming the first paragraph under treatment of appendicitis:

"Whether imminent danger of perforation exists or not, the physician who is called to a case of appendicitis should request the services of a competent surgeon. Few surgeons subscribe to the doctrine that all cases require operation, but, since it may become necessary to operate at any hour of the affection, the latter should help to settle the important question, 'when is operative interference demanded in the individual case?' The physician who does not pursue the course above recommended falls short of his duty, both toward the patient and toward the surgeon on whose skill he relies to safely remove the source of danger. It may be that a surgeon's fears are sometimes groundless, but I am convinced that there is much truth in the statement that physicians too often invoke the aid of the surgeon when the patient is beyond hope of recovery. Surely, in a disease that so often baffles both physician and surgeon, suddenly developing, as it sometimes does, a fatal virulence without previous unfavorable symptoms, they should stand guard together from the moment the case is diagnosticated or appendicitis is strongly suspected."

The section devoted to diseases of the nervous system is very satisfactorily presented for a work on general practice. It is full enough to be a good guide, and is strictly up-to-date in pathology—and it is only in pathology, and its consort, physiology, that there has been any recent change in our information of nervous disorders.

There is a frank admission of the limitations of medical learning of the present day, in placing under a separate heading of *Diseases of Unknown Pathology*, such affections as epilepsy, migraine, acute chorea, chronic chorea, choreiform disorders, paralysis agitans, tetany, infantile convulsions,

occupation neuroses, hysteria, neurasthenia, acromegaly, astasia-abasia and caisson disease.

While we do understand the conditions surrounding, and in a measure belonging and leading up to, these diseases, it is true that there is no positive knowledge of their exact and constant pathology, and pathology being the basis of the classification followed in this book it of course follows that those diseases having an unknown or indefinite pathology must needs be so formulated.

The last fifty pages of the work, parts X and XI, are given to *The Intoxications; Obesity; Heat Stroke* (part X); and *Animal Parasitic Diseases* (part XI).

There are altogether 1287 pages, numerous illustrations and charts, and a number of first class colored plates.

TUBERCULOSIS OF THE GENITO-URINARY ORGANS, MALE AND FEMALE. By N. Senn, M. D., Ph. D., LL. D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College; Attending Surgeon to Presbyterian Hospital; Surgeon-in-Chief St. Joseph's Hospital, Chicago. Illustrated. Philadelphia: W. B. Saunders, 925 Walnut Street. 1897.

When Professor Senn writes on any subject we expect to find the work complete and exhaustive. In his latest book, which is before us, we are not disappointed in this.

While the literature on the subject, as shown by this work, is quite extensive, it has been for the most part unavailable to American practitioners because of its fragmentary character and the fact that a great portion of the work was done by foreign observers and writers. Dr. Senn has rendered the profession a great service by systematizing and presenting in available form this mass of valuable material, supplemented by the results of a personal experience equaled by that of no other American surgeon.

The work is divided into ten chapters, or parts; the first two dealing with tuberculosis of the male genital organs; parts three, four, five, six, seven and eight treat of the disease as met with in the female organs of generation; while parts nine and ten take up the disease as found in the bladder and kidneys.

The author states that "The great obstacle to a more perfect development of the surgical aspects of tuberculosis of the male organs of generation in the past, and to a certain extent at the present time, has been and remains accuracy in diagnosis." If this book is widely read this will obtain to a much less degree.

The history, symptoms, diagnosis, prognosis, pathology and treatment is studied in such a manner that the subject will not be clouded by the obscurity with which it has been marked in the past.

While it is still unsettled as to whether the male genital organs are the seat of primary tuberculosis, or whether infection is secondary to a remote focus, the author believes that there is sufficient evidence to show that it is occasionally a primary affection.

In the differential diagnosis of urethral chancre, we are told that it is well to bear in mind tubercular-lesions which may so closely resemble primary syphilitic infection.

After a careful study of the differential diagnosis between tubercular and other acute and chronic inflammations of the testicle, including syphilis, a timely warning is given as follows: "If any doubt exists in the diagnosis between gumma and tuberculosis, the patient should be given the benefit of the doubt and subjected for a sufficient length of time to active anti-syphilitic treatment." If this advice had been followed more closely in the past there would have been fewer useless castrations.

In tuberculosis of the bladder little encouragement is given to operative procedures, more reliance being placed on general and local treatment. The standard 5% emulsion of iodoform in glycerine, or a $\frac{1}{4}$ to $\frac{1}{2}$ of 1% sol. of ter-chloride of iodine being advised locally.

The book abounds in sound, practical advice capable of being applied in every-day practice, as well as being exact and technical in its pathological aspects. It should be in the hands of every surgeon, gynaecologist and general practitioner.

The name of Mr. Saunders as publisher is a sufficient guarantee that the mechanical part has been done in the most perfect manner. Always well printed on good paper, substantially and neatly bound, it is a pleasure to take up a book published by this house.

C. W. O.

Review of Clinical Literature.

Being a List of the Leading Clinical Articles of the Past Month:

Arranged Alphabetically by Title, Giving Author and Reference

MEDICINE

- Dermatitis, Report of a Case of Malignant Papillary.—F. H. Wiggin and J. A. Fordyce, N. Y.—*N. Y. Med. Jour.*, Oct. 2.
- Epilepsy, A Study in.—W. Sinkler and F. S. Pearce, Philadelphia—*Penn. Med. Jour.*, Sept.
- Friedreich's Ataxia, Remarks on; with Notes of Three Cases.—H. Bramwell, Cheltenham, Eng.—*Brit. Med. Jour.*, Oct. 2.
- Homicidal, Amnesic Transitory Frenzy, Two Cases of.—C. P. Bancroft—*Bos. Med. & Surg. Jour.*, Oct. 14.
- Pneumonia, Varying Infections in.—W. H. Thomson, N. Y.—*N. Y. Med. Jour.*, Oct. 9.
- Peripheral Neuritis.—A. McPhedran, Toronto.—*Quar. Jour. Inebriety*, July.
- Spinal Syphilis, A Contribution to the Study of.—W. G. Spiller, Philadelphia.—*N. Y. Med. Jour.*, Sept. 25.
- Sporadic Cretinism, The Early Diagnosis of.—H. Koplik, N. Y.—*Med. Rec.*, Oct. 2.
- Sporadic Cretinism in America.—W. Osler, Baltimore—*Am. Jour. Med. Sci.*, Oct.
- Syngomyelia, A Case of with Trunk Anæsthesia.—H. T. Patrick, Chicago.—*Jour. Nerv. & Ment. Dis.*, Oct.
- Typhoid Fever, Statistics of 60 Cases of Complicated with Hæmorrhage from the Bowels.—R. G. Curtin, Philadelphia—*Jour. Am. Med. Ass'n.*, Sept. 25.
- Typhoid Fever, The Examination of 100 Cases of by Widal's Serum Test.—J. Coville and W. D. Donnan, Belfast, Eng.—*Brit. Med. Jour.*, Oct. 16.

Thomson, of New York, fully acknowledges the present unsatisfactory condition of the treatment of pneumonia, but prophesies advances for the future, such advances resting upon an enlarged understanding from the progress in bacteriology. "From many clinicians we hear that it is doubtful whether the treatment of pneumonia is any more successful now than it was thirty years ago. This doubt I

fully share, but one reason may be that pneumonia is too much regarded as pneumonia and nothing else, instead of being an infectious disease which produces very differing effects in those attacked according to very varying conditions in the infection. Moreover, at the very outset, it is unsatisfactory to treat a case of poisoning by dealing with its effects or symptoms instead of aiming to neutralize the poison itself. On this account our main hope against this formidable affection is from bacteriology. Owing to its normal tendency to be a sharply-defined, self-limited disease, there is much more probability that a pneumonic antitoxine will be found than in the case of tuberculosis, for the chronicity of the latter does not promise well for any inhibitory product developing with the growth of its bacilli."

SURGERY.

Appendicitis, 52 Cases Illustrating my Personal Experience with the Medical and Surgical Treatment of.—G. S. Peck, Youngstown O.—*Am Jour. Obs.*, Oct.

Appendicitis, On Several Cases of.—A. Brothers, N. Y.—*N. Y. Med. Jour.*, Oct. 2.

Bassini Operations, 250 for the Cure of Inguinal Hernia; without Mortality.—W. B. De Garmo, N. Y.—*Jour. Am. Med. Ass'n.*, Oct. 2.

Brain, A Case of Malignant Tumor of the Originating in the Middle Ear.—T. Barr and J. H. Nicoll, Glasgow—*Brit. Med. Jour.*, Oct. 16.

Brain Tumors, Remarks on, and their Removal.—M. A. Starr, N. Y.—*Brit. Med. Jour.*, Oct. 16.

Cicatricial Stenosis and Valve Formation as a Cause of Pyloric Obstruction, with a Report of 5 Cases Relieved by Operation.—W. J. Mayo, Rochester, Minn., *Jour. Am. Med. Ass'n.*, Oct. 16.

Femur, On the Mechanical Treatment of Ununited Fracture of the Neck of the.—N. M. Shaffer, N. Y.—*N. Y. Med. Jour.*, Oct 23,

Gall Stones, The Surgical Treatment of.—S. White, Sheffield, Eng.—*Quar. Med. Jour.*, Oct.

Intestinal Resection, Two Interesting Cases of. with End-to-end Anastomosis by Means of the Murphy Button; with Recovery.—X. O. Werder, Pittsburg—*Peun. Med. Jour.*, Sept.

Ligatures and Sutures, The Sequelæ of.—G. M. Hughes, Philadelphia—*Am. Jour. Obs.*, Oct.

Neck, A New Method for the Removal of Diseased Processes, in the, Posterior to the Sterno-mastoid Muscle.—F. Hartley, N. Y.—*Bos. Med. & Surg. Jour.*, Oct. 21.

Rectum, A Discussion on the Operative Treatment of High Cancer of the.—J. Bell, Montreal—*Brit. Med. Jour.*, Oct. 16.

Dr. G. E. Armstrong, Surgeon to the Montreal General Hospital, has tabulated a series of 514 cases of appendicitis to show the age incidence as well as the relative frequency in the sexes.

Age.	Male.	Female.	Total.
1 to 10.....	19	13	32
10 to 20.....	75	62	137
20 to 30.....	138	71	209
30 to 40.....	69	13	82
40 to 50.....	28	10	38
50 to 60.....	7	3	10
60 to 70.....	2	2	4
70 to 80.....	2	0	2
	340	174	514

Three not mentioned. 340 males, 174 females. Nearly two males to one female.

* *

In the treatment of shock following operations Dr T. L. Rhoads, assistant in the surgical clinic in Jefferson Hospital, Philadelphia, advises (*Therap. Gaz.* Oct.):

- “1. Prophylaxis before and during the operation.
2. Wrap the patient in a warm blanket and apply hot-water bottles or hot bricks, and a hot-air apparatus.
3. Lower the head and shoulders:
4. Apply sinapisms to the precordium.
5. If severe shock, perform hypodermoclysis; if alarming, perform saline transfusion.
6. Give an enema of six ounces of strong, hot coffee.
7. Massage the abdomen and apply an abdominal compress.
8. Elevate the limbs, surround them with cotton wool, and bandage.
9. Administer hypodermic injections of liquor ammoniæ aromaticus in half-drachm doses every fifteen minutes, and atropine sulphate $\frac{1}{100}$ grain every half hour, until reaction sets in.”

OBSTETRICS.

Enterocoele, Acute Partial.—F. A. Stahl, Chicago—*Jour. Am. Med. Ass'n.*, Oct. 2.

Oophorectomy in the Treatment of Cancer.—S. Boyd, London—*Brit. Med. Jour.*, Oct 2.

- Pelvic Hæmorrhage. The Treatment of Circumscribed.—M. Rosenwasser, Cleveland, O.—*Am. Gyn. & Obs. Jour.*, Oct.
- Puerperal Diphtheria.—H. W. Longyear, Detroit, Mich.—*Am. Jour. Obs.*, Oct.
- Puerperal Sepsis, The Source of.—J. M. Duff, Pittsburg—*Am. Jour. Obs.*, Oct.
- Post operative Lesions and Sequelæ.—J. Price, Philadelphia—*Am. Jour. Obs.*, Oct.
- Peripheral Neuritis Connected with Pregnancy and the Puerperal State.—E. S. Reynolds, Manchester, Eng.—*Brit. Med. Jour.*, Oct. 16.
- Tuberculosis, Acute, in Puerperal Women.—E. L. Call, Boston.—*Box. Med. & Surg. Jour.*, Sept. 30.
- Uterus, Inversion of the Puerperal: A Clinical Report.—S. Marx, N. Y.—*Am. Gyn. & Obs. Jour.*, Oct.
- Urachus, Cysts of the.—R. Douglas, Nashville, Tenn.—*Am. Jour. Obs.*, Oct.

E. A. Ayres, M. D., Professor of Obstetrics, in the New York Polyclinic, in a communication on symphyseotomy in the July issue of the *Am. Jour. Obs.*, gives specific rules for the performance of the operation, as follows:

1. Secure full dilatation of the cervix, if possible without risk to the child.
2. Have the urethra and bladder held to one side with a sound.
3. Make the initial incision a little above the subpubic arch and under the *elevated* clitoris.
4. Introduce the left index finger within the vagina against the posterior groove or ridge of the joint, up to the top.
5. Pass a narrow tenotomy knife, with the point close to the joint, up to within a half-inch of the top, and *under* the overlying soft tissues.
6. Substitute a probe-pointed bistoury and meet the left index finger with the probe over the top of the joint, and work the blade through the joint downward until separation is felt by the posterior finger.
7. Have an assistant press the mouth of the wound and the tissues lying over the joint with a small piece of gauze.
8. Deliver with forceps, if possible, and refrain from suprapubic pressure, aiming to deliver the head through the cervix without drawing the latter down below the symphysis.

9. Hold the bladder well to one side while pressing the pubic bones together.

10. Pass a small strip of gauze into the prepubic wound, and another against the cervix, after irrigating, leaving both pieces exposed for easy removal, having refrained from stitching cervix or perineum.

11. Introduce a soft-rubber retention catheter into the bladder and leave it until sure the patient can voluntarily micturate.

12. Dress the vulva with gauze and strap the joint with adhesive strips.

13. Remove all the gauze in thirty-six hours and irrigate vulva and vagina twice a day, keeping the vulva carefully dressed between times."

* * *

Goldspohn, of Chicago, in his Gynæcological Society thesis on large ventral and umbilical herniæ in the adult concludes thus:

1. Ventral herniæ being chiefly a sequel of some form of abdominal action, are largely preventable: (*a*) by the avoidance of those conditions which lead to suppuration, either primarily by infection or secondarily from the presence of necrotic tissues, or by impairing the normal circulation; (*b*) by as complete and accurate a restoration of the individual continuity of all the strata, that were served by the incision, as is possible; (*c*) by avoiding the intervention of foreign bodies—as capillary or tubular drains—or of pedicles, etc., between the surfaces of the wound for a longer time than forty-eight hours, when possible.

2. All umbilical and ventral herniæ, in persons whose health otherwise does not positively forbid the taking of the required surgical risk, should be radically cured early, by operation, before they impair the general patency of the abdominal walls by their larger proportions. This indication becomes imperative when their contents are no longer spontaneously or otherwise readily reducible.

3. The principle features in operating for the radical cure of large umbilical and ventral herniæ are: (*a*) restoration of the recti abdominis muscles, with their sheaths

unitedly and entire, to their normal approximation, and retention of them there for at least two weeks by long tension sutures—preferably of wire—that pass beyond their lateral confines, transfer all tension to parts that lie latterly from the lineæ semilunares, and are so placed that they do not cut any muscular or aponeurotic fibres, nor endanger abdominal viscera; (b) all mutilating plastic procedures that cut off or interfere with the normal circulation, or endanger the continuity or normal contiguity of muscular and aponeurotic structures should be avoided.”

* *

Wenning, of Cincinnati, in a paper presented to the late meeting of the American Association of Obstetricians and Gynæcologists having special reference to the treatment of placenta prævia summarized such treatment in accordance with the period of the pregnancy and the amount of hæmorrhage, as follows:

“(a) *Before labor*—(1) Hæmorrhage slight, expectant treatment; (2) hæmorrhage moderate, vaginal tampon; (3) hæmorrhage profuse, also try tampon and then induce labor.

(b) *In the beginning of labor*—(1) Hæmorrhage moderate, first tampon vagina until dilatation sufficient for the introduction of the cervical bag, or, if skilled assistance be at hand, Braxton Hicks's method of bipolar version; (2) hæmorrhage profuse, first cervical tampon; if not successful, gradual manual dilatation of os until

(c) *Labor is well in progress*—Then rupture membranes and deliver by podalic version, or if hæmorrhage is arrested by the descending head, apply forceps, or if pains be good, permit spontaneous expulsion.”

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CLINICAL LECTURES ON DISEASES OF THE
HEART, LUNGS AND PLEURA.—By Joseph M.
Patton, M. D., *Professor of Internal Medicine,*
Chicago Polyclinic.

ACUTE ENDOCARDITIS.

Inflammation of the endocardium may be acute or chronic. The ætiology of these forms is largely identical, while clinically and pathologically they present marked individual features. In most cases of chronic endocarditis the tissue changes are but the advanced stages of an acute process, yet there may never have been any acute symptoms manifested.

Acute endocarditis may be infectious or non-infectious in nature. See has claimed that endocarditis is always of bacterial origin. Many varieties of organisms have been demonstrated in the products of endocardial inflammation. Still, in many cases infection cannot be demonstrated. Endocarditis occurring during intra-uterine life, is found almost altogether in the right side of the heart (Orth claims that, as a primary affection, it is equally common on both sides in foetal life), and is a frequent cause of congenital lesions of the orifices of the right heart, defects of the auricular or ventricular septa or of cardiac malformations.

After birth endocarditis is rare in the right heart.

Acute, non-infectious endocarditis is sometimes called exudative endocarditis. Acute, infectious endocarditis is called ulcerative, or malignant (Osler).

ÆTIOLOGY.—Acute rheumatism is the most frequent cause of endocarditis. According to Bamberger twenty per cent. of the cases of acute rheumatism are complicated by endocarditis, while Bellevue Hospital Reports show that it occurred in over thirty-three per cent. of their cases. Nephritis is a frequent cause of endocarditis. The essential fevers, the exanthemata, diphtheria, syphilis and any disease in which there is an altered or toxic condition of the blood, may cause endocarditis. Wunderlich places measles next to rheumatism as a cause of endocarditis. The disease may also be of traumatic origin (Bamberger).

Infectious endocarditis occurs secondary to scarlatina, diphtheria, measles, pyæmia, puerperal fever, croupous pneumonia or to any septic process, wherever located. Gonorrhœa may cause acute infection of the endocardium, and the gonococcus has been repeatedly demonstrated in the inflamed endocardium of verrucose endocarditis secondary to gonorrhœa (His, Leyden, Dauber and Borst, Stengle and others).

Almost all varieties of infectious organisms have been found in infectious endocarditis. Some observers regard some lesion of the endocardium previous to the invasion of organisms as necessary to the development of infectious endocarditis. This is probably true in the milder degrees of infection, for we are beginning to learn that infectious endocarditis is of more frequent occurrence and variable intensity than was formerly supposed. While a large percentage of the cases of infectious endocarditis already reported show lesions of the endocardium previous to the infection, such lesion is not a prerequisite to the development of the most malignant type of the disease.

Fraentzel states that malignant endocarditis may be acute, subacute or chronic. The valves of the right heart, and especially the pulmonic valves, are not so frequently affected as in other forms of endocarditis, and that the ventricular portion of the endocardium is relatively more often affected than in other forms of endocarditis.

Because of the association of malignant endocarditis with puerperal fever it is particularly liable to occur in women. Infectious endocarditis may occur secondary to

typhoid fever (Shattuck), or to la grippe (Huchard, Oulmont, Barbier).

The occurrence of endocarditis by the direct extension of inflammations of the lung, pleura, pericardium or myocardium is very doubtful.

MORBID ANATOMY.—Endocarditis is usually limited to the region of the valves and orifices of the heart. Occasionally it may extend to the adjacent portions of the cardiac walls. The portions of the valves most often affected are those which are most exposed to friction, i. e., the convex surface of the aortic valves, and the auricular surface of the mitral valves.

At the aortic valves the inflammation commences along the band of tissue stretching from the corpus arantii to the attached border of the valve. At the mitral valve the inflammation begins on a line stretching across the surface of the valves at a short distance from the insertion of the chordæ tendineæ.

Vegetations attached to the valves may produce inflammation of the mural endocardium by friction against it, but infection from the valvular lesion is probably the most frequent cause.

In acute endocarditis the deeper layers of the endocardium become infiltrated with new cells, the inter-cellular substance is softened or destroyed. The new tissue pushes up the endocardial layer and forms granulations or vegetations (papillary endocarditis). These granulations may lose their endothelium and induce a thrombotic deposit of fibrinous coagula.

If the sub endothelial cell infiltration is very rapid and intense, the new tissue may become necrosed with loss of substance (ulcerative endocarditis). These ulcerations may extend to and involve the cardiac substance. If the cell accumulation is sufficiently rapid, small accumulations of pus may form in the deeper layers of the endocardium (endocardial abscess).

The term mycosis endocardii has been applied to ulcerative endocarditis because of the various bacteria and micrococci which may be present.

Ulceration may cause destruction of the substance of a valve leaflet and result in its perforation. Laceration or aneurism of the weakened valves may result from pressure.

Embolic processes, infectious or otherwise, may result especially in infectious endocarditis. These emboli vary greatly in size and effect. Ischæmia and gangrene of the lungs may result from embolic infarction; hemiplegia and secondary softening of the brain if the emboli are large, if small, softening with evidence of obstructed circulation. Infarctions and suppurations in the liver, spleen and kidneys may occur. Capillary embolism may occur in different organs at the same time. Capillary embolism in the skin causes numerous ecchymotic spots and may result in cellulitis.

Malignant endocarditis is especially liable to attack hearts which are the subject of chronic endocarditis.

Severe forms of endocarditis are likely to be accompanied by more or less myocarditis, the combined effect being to greatly weaken the heart muscle, embarrass its action and increase the liability to dilatation.

When the inflammatory process is moderately intense the new tissue becomes partially organized and may undergo fatty or calcareous degeneration with resultant thickening, shrinking and rigidity of the valves, the cusps of which may be adherent to each other or to the walls of the heart.

Extensive vegetations and papillary growths may form from continued development of the new tissue.

CLINICAL HISTORY.—The clinical history of acute endocarditis will vary with the nature of its cause. There is, perhaps, no affection of the heart in which the subjective signs may be more indefinite than in the moderately severe forms of acute endocarditis, either infectious or non-infectious. If the heart muscle is not affected there may not be a single rational symptom which can be excluded from those due to the affection with which the endocarditis may be associated.

When endocarditis occurs in connection with rheumatism or nephritis we may have a rise of temperature of one

or two degrees, accompanied by a sense of constriction about the chest and discomfort about the præcordium. The patient complains of dyspnœa, and palpitation which is not appreciable by palpation, and lies somewhat inclined toward the left side.

The pulse may or may not be increased in rapidity with the onset of the endocarditis; it usually is rapid in children, in whom there may be restlessness, anxiety or delirium. Pain is not usually complained of, though there may be ill-defined pain in the præcordium.

In severe cases, with considerable involvement of the heart muscle, there may be distressing dyspnœa, palpitation with a pulse not at all in proportion to the action of the heart, and a temperature of over 103° F.

Again, in acute rheumatism we may, while making daily examinations of the heart, observe the physical signs of endocarditis develop, while at the same time there may not be present a single rational sign that would call our attention to the heart.

In malignant endocarditis the patient is more critically ill. There are erratic and frequent chills and an irregular temperature. The general condition may resemble closely that of typhoid fever or acute miliary tuberculosis.

The occurrence of infectious emboli is strongly suggestive of ulcerative endocarditis. Embolism occurs more frequently in infectious than in non-infectious endocarditis, and is most apt to affect the spleen. A typhoid state may be present in severe cases of malignant endocarditis which, with jaundice, chills and irregular fever, reaching possibly 105 or 106° F., may simulate the icteric form of malarial fever.

There may be suppression of urine with delirium and coma. This type of disease may be associated with pneumonia.

With rupture of a valve there may occur sudden dyspnœa and cyanosis, with symptoms of multiple embolism.

In some instances the acute form of malignant endocarditis may pass into a sub-acute or chronic form (Fraentzel). Here there will be more or less general improvement with an irregular, slight elevation of temperature, frequent irreg-

ular chills which occur at continually increasing intervals, thus prolonging the course of the disease for months.

We have here a patient exhibiting a common history for an ordinary acute, non-infectious endocarditis:

Young woman, sixteen years old, came to clinic one week ago complaining of rheumatism in the feet and hands. Never had rheumatism before this attack. Ankles swollen and tender; walks with difficulty. Second and third metacarpal joints in each hand swollen and tender. Temperature 100° F. Tongue coated, appetite poor, bowels regular. Pulse 110, irregular in force, regular in rhythm, irritable and quick in character.

On examination of her heart we find a soft, blowing, systolic murmur in the præcordial area, most intense just above the apex. No alterations in the heart.

Were this patient confined to bed the pulse would not be so fast and there would be nothing to direct attention to the heart, the condition of which would remain undiscovered unless through a practice of routine examinations.

Given a patient the subject of chronic endocarditis in whom there is a history of recent and more or less sudden disturbance of cardiac action, we must bear in mind the probability of such disturbance being due to a fresh attack of endocarditis, particularly if there is no history of over-exertion.

We must also bear in mind the possibility of such an attack being infectious in nature, especially if the patient be suffering from pneumonia, typhoid fever, influenza or any infectious process at the time of occurrence of the cardiac manifestations.

SYMPTOMS AND DIAGNOSIS.—The only positive symptoms of endocarditis are those obtained by physical examination, and from these the diagnosis must be made.

Where an acute endocarditis has developed we notice that the impulse of the heart against the chest wall is increased in force. The position of the apex impulse may be distinctly visible, particularly is this the case in children in whom there is apt to be undue cardiac excitement.

The total area of impulse may be increased either from forcible action of the heart due to excitement of the organ,

from enlargements due to previous disease of the heart, or, in severe cases, to dilatation due to myocarditis.

The impulse may be regular or irregular, and if there is much cardiac enlargement, tumultuous. Later the apex beat and cardiac impulse becomes more indistinct, but never as suddenly as in pericarditis.

Palpation at the onset of the disease determines the abrupt, forcible apex beat, and the variations in force which occur; the regularity or irregularity of the heart's action; and the tumultuous action which characterizes the later stages of severe cases when myocarditis has given rise to dilatation. At this time the quick, jerky pulse of the earlier stages has changed to a soft, small pulse in marked contrast to the laboring heart. An endocardial thrill may possibly be felt at times.

On percussion the area of cardiac dullness may be normal or increased. Increase of dullness may be due to dilatation from myocarditis or from extensive deposit of fibrinous masses in the heart, or to combined hypertrophy and dilatation from previous disease. Increase in the breadth of dullness occurring after a few days may be due to dilatation of the right heart from increase in the pressure in the pulmonary artery from insufficient discharge of the left auricle (Skoda).

On auscultation we find the heart sounds, in the beginning of the disease, louder, stronger and abrupt. The second aortic sound will be intensified. Later they may be weaker and indistinct and the second pulmonic sound may be intensified.

There may, or may not, be a murmur. Usually a murmur is the first positive sign of endocarditis. A murmur may be valvular or ventricular. It is produced by the passage of blood over the roughened endocardium. Niemeyer says that a murmur may occur with healthy valves, merely from increased tension. A murmur from acute endocarditis will be systolic in time, soft and blowing in character, and will be heard with greatest intensity below the lower border of the fourth rib toward the apex. The point of maximum intensity may vary at different examinations.

With valvular localization a murmur will present, to

some extent, the special characteristics of valvular murmurs.

The most common valvular localization of acute endocarditis is at the mitral orifice. It is said to occur in fifty per cent. of the cases of acute endocarditis. In children acute endocarditis almost always affects the mitral valves.

There may be a well-marked murmur or merely a roughening or prolongation of the first sound. The murmur is limited to the region between the apex and the anterior axillary line. It is not, as a rule, heard behind. It may be heard over the epigastrium.

In most cases of acute mitral endocarditis the lesion presents the characteristics of mitral regurgitation. Mitral stenotic murmurs are seldom well-defined during the acute stage of the disease. In children stenosis and regurgitation are frequently combined.

There may be accentuation of the second pulmonic sound, doubling of the first heart's sound, or reduplication of the second sound, in mitral endocarditis.

Transient pulmonic or tricuspid murmurs may accompany mitral endocarditis.*

Aortic localization in acute rheumatic endocarditis is infrequent in early life. In adult life it is usually associated with vascular and nephritic lesions, and its acute stages are never well marked. In malignant endocarditis at any age the aortic valves are frequently affected, and combined lesions of the aortic and mitral valves are not uncommon.

In acute aortic endocarditis the second sound may be wanting over the carotids. At the very onset the second sound may be louder than normal, but soon becomes less so and may be replaced by a murmur indicative of regurgitation, which is frequently the first evidence we have of aortic localization. A systolic, aortic murmur in acute endocarditis is usually softer than in chronic endocarditis though it may be musical at any stage.

Acute endocarditis is to be differentiated from pericarditis, inflammation of the aorta, and the functional murmurs of

*According to Loomis, aortic murmurs are present in mitral endocarditis in sixteen per cent. of the cases, tricuspid murmurs in fifty per cent. of acute mitral endocarditis; and with forty per cent. of acute aortic murmurs; in twenty-five per cent. of mitro-aortic murmurs; and in twelve per cent. of all cases of acute rheumatic endocarditis.

anæmia and fevers, while the infectious type of endocarditis may be confounded with typhoid fever, acute miliary tuberculosis and pyæmia or malarial infections.

In pericarditis there is apt to be more præcordial pain. The pericardial friction sound is superficial in character, not distant; it is harsh in quality, grazing or rubbing, not soft and blowing; it is a to-and-fro sound, not necessarily rhythmical with the heart sounds; it is confined to the præcordial space, not having any direction of transmission; its intensity is more likely to vary with change of position; it will disappear with the occurrence of an increased area of dullness (effusion).

Aortitis is apt to be associated with general arterial disease; there is pain at the base of the heart or through to the spine; the pulse is more rapid and the respirations apt to be quicker than in endocarditis. The first aortic sound is indistinct or lost, and if calcification has occurred the second sound will have an unusually loud, metallic ring.

The functional murmurs of fevers are heard at the base of the heart instead of the apex. They are much softer in quality than the basic murmurs of aortic localization in acute endocarditis.

The hæmic murmurs of anæmia are heard better above the level of the fourth rib than below. They have no direction of transmission, are very soft in quality and are prone to be inconstant. They are heard best along the left parasternal line from the third to the fifth costal cartilage and there may be associated murmurs in any of the larger arteries.

When an attack of acute endocarditis occurs in a heart which has already developed the secondary effects of chronic valvular lesions, the diagnosis may be very difficult. When, however, under such conditions, the fever persists after all active rheumatic manifestations have been allayed, with a rapid, excitable or irregular pulse, an acute inflammation of the endocardium may be looked for.

When malignant endocarditis fails to produce distinct cardiac symptoms, or engrafts itself upon an old endocarditis without particular modification of the symptoms of the chronic affair, it may be very difficult of diagnosis. The

erratic chills and irregular temperature, with examination of the blood, will eliminate both typhoid and malarial fevers. Careful physical and bacteriological examination will differentiate it from tuberculosis.

The occurrence of sudden enlargement of the spleen, albuminuria, hemiplegia, dyspnoea or cyanosis, is suggestive of infectious endocarditis during any septic process, especially if there has occurred acute insufficiency of the cardiac valves.

This patient exhibits an acute attack of endocarditis engrafted upon a chronic affair.

Man 36 years old. By occupation a laborer. Six years ago had acute rheumatism; recovered slowly; resumed work and experienced no trouble until three weeks ago. Was not aware of any cardiac difficulty subsequent to the first attack of rheumatism.

Three weeks ago he had a slight attack of rheumatism in the feet, which were swollen and painful. He suffered from dyspnoea and palpitation, and appeared at the clinic because of these troubles. Temperature 101° F. Pulse 110, very irregular in force, slightly so in rhythm. Heart enlarged; apex in sixth space one inch outside of the left mammillary line. There was an aortic diastolic murmur, also a mitral systolic murmur not transmitted beyond the anterior axillary line. The second pulmonic sound was accentuated.

The enlargement of the heart is due to hypertrophy and dilatation of the left ventricle from chronic aortic lesion.

The question which presented itself was, whether there was an acute attack of endocarditis in connection with chronic aortic endocarditis and its sequences, in which the former condition had caused weakness of the muscle and resulting dilatation; or if the hyposystolic period of a chronic valvular lesion had developed coincidentally with an attack of acute rheumatism. In deciding this question the history was of little value, as the patient was not sure but that he had sustained heart strain from overwork just previous to the appearance of his symptoms.

He was placed on active anti-rheumatic treatment and at the end of ten days all symptoms of rheumatism had disappeared. His heart was still rapid and excitable with palpitation. The temperature was 99.5° F. He was sent to bed

and placed on sodium iodide. His dyspnoea is not troublesome at present. Temperature normal, pulse eighty and regular. He does not suffer from palpitation unless he exerts himself. You will see that while the aortic murmur is unchanged and there is still present the evidences of chronic enlargement of the heart, the mitral murmur is scarcely to be heard, which fact, together with the relief to the dyspnoea and palpitation, and a slight reduction in the width of cardiac dullness with a lessened force of the second pulmonic sound, tends to show that the heart has partially recovered from the weakness caused by the attack of acute endocarditis.

TREATMENT.—The treatment of an attack of acute endocarditis will vary with the nature of its cause. The ætiological treatment embodies, if possible, more active treatment against the associated disease.

When acute endocarditis occurs with nephritis, elimination by the kidneys and bowels must be pushed. The skin cannot be used as a channel for elimination, as the results are not sufficient to warrant the necessary depression.

When acute endocarditis complicates acute rheumatism the latter must be brought under control as soon as possible.

It seems to be a common opinion that cardiac complication in acute rheumatism is less likely to occur when sodium salicylate is employed, than when salicylic acid is used.

I do not know of any way to decide such a question, but when the joint manifestations of acute rheumatism are very severe, I do not hesitate to take advantage of the quicker relief afforded by salicylic acid, even though chronic endocarditis be present, or the acute form should develop. The depression from the acid is at times marked, and the heart should be watched closely. Ten grains may be given in capsule every hour or two hours, until pain and swelling are relieved and the temperature lowered, then the sodium salt should be substituted.

In milder cases of rheumatism, even though endocarditis should develop, the sodium salt is the better remedy and should be pushed, for we need not expect improvement

in the endocarditis until the active rheumatic manifestations have subsided.

It is claimed by those who use the method advocated by Fuller for the treatment of acute rheumatism, that when the alkaline treatment is adopted cardiac complications are much less likely to occur. Bartholow states that this method is adapted to the treatment of rheumatism in plethoric subject and is not well borne by anæmic patients with rheumatism.

In regard to the treatment of the endocarditis itself we have to choose between the expectant method comprising rest, diet and the management of the rheumatism, and the more active treatment directed towards limiting the extent and intensity of the inflammation. Rest is absolutely necessary no matter what method of treatment is adopted. A patient with acute endocarditis should be kept in bed for from three to five weeks and all exercise should be given by gentle massage.

The diet should be easy of assimilation and intestinal fermentation should be avoided.

The internal antiphlogistic treatment of endocarditis has generally been discarded. There is no evidence that the internal administration of calomel will in any way modify the extent or severity of the inflammation.

Digitalis should not be used; its employment for tachycardia, or palpitation due to endocarditis, as has been recommended, is irrational. There is no condition in endocarditis, *per se*, which justifies the use of digitalis.

Sodium iodide (five to seven grains), or potassium iodide (eight to ten grains), should be given thrice daily during the course of the disease. If there is restlessness, from pain in the joints or from præcordial pain, we are justified in giving anodynes for its relief. Some form of opiate is most suitable for this purpose. Two or three leeches to the præcordial region may be used for pain if deemed advisable.

External applications to the præcordium are variously regarded. Sinapisms, vesicants, cups and leeches have generally fallen into disuse, though there is no doubt that each may have its value in certain instances.

Even when pain is present heat does not seem to afford

the same relief which attends its use in the more superficial inflammation of pleurisy. Cold is more effective. The use of the ice bag is highly endorsed by Forchheimer, and I have seen much relief to the pain and palpitation from its use. In some cases in children, however, the application of cold increases the palpitation and distress.

Vesicants over the præcordium, as usually employed, do little good, and in children they are objectionable.

Caton strongly advises a form of continuous counter-irritation by means of a series of small blisters of the size of a florin, applied one at a time to the front and sides of the chest, along the course of the third, fourth, fifth, or sixth intercostal nerves. Caton reports forty cases treated in this way, combined with prolonged rest and the internal administration of the iodides, with twenty-nine recoveries with normal hearts. This is a somewhat remarkable percentage of recoveries, and granting the complete recovery of fifteen per cent. of the cases under any form of treatment, is still a strong endorsement of the method.

In the recurrent form of acute endocarditis the therapy is directed against the systemic cause. Some gouty, rheumatic, nephritic or intestinal toxæmia will be found as the cause of this form of the disease, which needs much study and observation before special therapy can be instituted.

The treatment of infectious endocarditis is not very satisfactory. Sources of infection must be removed if possible.

Complications of hæmorrhages or infarctions must be managed according to location and extent.

On account of the disastrous effect of infectious myocarditis upon the myocardium the chief indications are stimulation and nourishment.

Alcohol, ether, camphor, musk, strychnia and quinine may be used according to indications. When heart failure threatens, the special stimulant selected should be administered hypodermically. Strychnia and alcohol are the best for this purpose. Nitro glycerine should not be used unless there is high arterial pressure, and then it should be used cautiously.

Fraentzel recommends quinine and alcohol in ample and continuous doses in malignant endocarditis. He advises

from seven and one-half to fifteen grain doses of quinine two or three times daily. It should not be given to the point of producing nervous disturbance.

On account of the possible effect of high temperature on the heart muscle, the administration of antipyretics to control the rise in temperature may be advisable in cases where the fever is severe. Here it is a choice between the bad effects of high temperature and the depressing effect of the remedy to be used. The latter is at times to be risked in preference to the former.

Antipyrin is too dangerous. Acetanilid and phenacetine are somewhat safer, especially the latter, when given in small doses (three grains) in connection with quinine.

There is less depression and perspiration, however, following the use of lactophenin than phenacetine, in conditions of this kind, and I would regard it as preferable to other remedies of this class under these circumstances, either alone or in connection with quinine. Five to seven grain capsules may be given every two or three hours as necessary. If we can bridge over the active period of the disease and obtain time for the use of nourishment and tonics, we may possibly add to the list of recoveries of even the severe type of infectious endocarditis.

Before leaving this subject I wish to reiterate the importance of prolonged rest in the treatment of acute endocarditis. In the milder forms of acute non-infectious endocarditis the patients are particularly hard to control, and it is just these cases which develop insidiously into chronic endocarditis with valvular lesions which handicap the individual for the remainder of life, and place the physician in the position of a mere watcher to avert further evil. The impossibility of controlling the endocardial inflammation without absolute quiet, and the dangers of exertion, must be placed before the patient in a strong light, and the responsibility of disobedience made to rest with himself.

PAEDIATRIC CLINIC.—Service of A. C. Cotton,
M. D., *Professor of Diseases of Children, Rush
Medical College, Chicago.*

(Reported by I. Lange, M. D.)

Chorea.—Ida A., 11 years old, began to have, in April, irregular movements of the arms, legs, head and facial muscles, growing gradually so bad that by May articulation was interfered with so that she could not speak. There is a history of pain in the right side of the chest radiating to the region of the heart occurring one evening on going upstairs. No neurotic or definite rheumatic symptoms, nor heart lesion, discoverable, but the probable cause of the onset of the disorder seems to be worry at school over studies and failure in examinations. Your attention is called to a group of disorders to which chorea belongs, namely, rheumatism, growing pains, heart disease. In a rheumatic family one child may have but one of these forms, another all or possibly two out of the list as his portion of the common morbid tendency. On the other hand we find chorea very frequently among the neurotic group, hysteria, epilepsy and insanity as the result of the inheritance of an unstable nervous system. The prognosis of these cases is usually very favorable, 95 per cent. getting well without treatment. It is customary to rely on arsenic, however, almost as a specific. The removal of annoying, irritating or exciting influences is necessary. The correction of anæmia, if present, is as necessary as judiciously selected food.

II. *Purpura.*—This eight year old girl had a febrile attack four months ago. While she always seemed poorly nourished, she appeared otherwise well up until then. Breast fed and of healthy parents, who are both living. She has two brother and sisters in good condition. About two or three months ago small, red spots appeared on the lobes of the ears and on the trunk. Epistaxis at intervals of two weeks. She now shows a very marked anæmia of the integ-

ument and mucosa, sordes and numerous hæmorrhagic spots on the thighs, upper portion of forearms and buttocks. They are pin-point to pea-sized ecchymoses, smooth, not elevated above the surface and not disappearing under pressure. The urine is negative, temperature normal in the axilla. We hear a distinct cardiac murmur, louder at the base than at the apex, but all over the chest the heart's action is very tumultuous and rapid.

In all probability this girl suffered from an acute attack of endocarditis at the beginning of her sickness.

Purpura appeared subsequently and exists presently to judge from the recurring epistaxis and petechiæ. There is no history of hæmatemesis. When the stools contain blood it is usually dark, not bright red. Cerebral hæmorrhage may also occur among children. In the severer forms of purpura circumscribed or general œdema may occur and form a marked symptom.

The diagnosis of purpura is not usually difficult. In children flea and bug bites present in their later stages almost the same appearance as purpuric petechiæ, but the central puncture of the parasite can be distinguished as a rule. No other disease is characterized by the appearance of hæmorrhagic patches which do not disappear under pressure with the finger, and which are without some definite local or general cause to account for them. The prognosis of purpura usually good; the pyretic variety, where the mucosæ are affected, has a possibility of a fatal termination. The treatment of our case consists of rest and hæmic tonics.

III. *Hydrocele*.—Isaac O., aged 5 years. Last Christmas the father noticed swelling in the lower part of scrotum and later a truss was applied. No pain. Had croup two years ago; measles two months ago; sore throat a month ago. I find both testicles present and of equal size, a patulous, left inguinal ring with all evidences of hernia, an elastic, soft cyst like tumor. Exclusion of light shows transparency. Puncture of tumor with aseptic sterile needle might be harmless, even if it should prove to be hernia, but should be avoided. This is a very common affliction in childhood—hydrocele—found in early infancy, congenital at times and

often accidental, the testis being squeezed by the child while keeping its legs crossed or from other accidents. The father states that there is a difference in size of this tumor at times. We can explain this condition by the fact that the fluid will flow in and out of the peritoneal cavity—where the whole vaginal process remains patent—according to the position of the child. Where the tunica vaginalis and funicular processes are distended with fluid, the process being closed at the internal ring, we have hydrocele. There may be an encysted hydrocele of the cord from distension of an unclosed segment of the funicular process.

Treatment. Many cases of hydrocele get well without treatment. If due to irritation remove cause. The congenital variety may disappear by spontaneous closure of the funicular process. Subcutaneous puncture is often done. Repeated aspirations with injections of irritants is the surest method, though relapses occasionally occur.

IV. *Restless Baby.*—This nursling from the maternity ward is one month and two days old and appeared before you two weeks ago. Its weight at birth was eight pounds and four ounces; cried very much and nursed very little.

This condition suggested an analysis of mother's milk, which revealed a sp. gr. of 1.020, fats 2.30, proteids 2.0, sugar 4.0, ashes 0.3.

The first child of this mother was bottle-fed, because it refused to nurse, and it died. The vast improvement of this baby is very apparent since leaving the hospital two weeks ago and this change, relieving the mother of her anxiety about her family and her household duties, favored the secretion of a better quality of milk, the baby gaining materially.

Our analysis of today shows an improved nourishment: sp. gr. 1.030, fats 3.4, proteids 2.5, sugar 6.0. Remember that you must evacuate all contents of the breast for a reliable analysis, for the later portions of expressed milk contain a greater percentage of fat.

This baby also has a marked hyperæmia of the skin which evidently is caused by excessive greasing.

CLINICAL LECTURE ON OBSTETRICS AND GYNÆCOLOGY.—EMBOLISM AND THROMBOSIS.
—PHLEGMASIA ALBA DOLENS.—By Denslow
Lewis, M. D., *Professor of Gynæcology in the
Chicago Policlinic.*

(Delivered in Cook County Hospital, Chicago. Stenographically reported by
Bertha Barnet.)

It now becomes important to realize just what takes place when the placenta separates from its uterine attachment. During the uterine contractions incident to labor it is probable that the placenta becomes to some extent detached from the upper segment of the uterine cavity, where it develops in the greater number of cases. As soon as the child is born there is often a pause in the proceedings. If the detachment of the placenta has been at all extensive there may be a brisk hæmorrhage which will perhaps cause us to resort to expression, thus effecting an early expulsion of the placenta. In most instances, however, we prefer to await the resumption of uterine contractions and we deliver the placenta according to Credé's method, as I have already explained and demonstrated. It is well to bear in mind that hæmorrhage at this time may be due not to the open mouths of blood vessels at the placental site but to a laceration of the portio vaginalis extending perhaps well toward the peritoneum. Should the hæmorrhage continue after the expulsion of the placenta and proper uterine retraction it may be advisable to inspect the cervix by means of Simon's retractors or Sims' specula and to resort to immediate ligation of arteries or closure of the laceration. Many a woman has suffered a serious loss of blood because her medical attendant had failed to appreciate the possibility of a deep cervical laceration.

I have explained the formation of the decidua. The portion to which the placenta is adherent is called the decidua serotina; when the child has been expelled the dimin-

tion in the size of the uterus causes the diameter of that portion of the endometrium occupied by the placenta to become so constricted that there occurs mechanically a peeling off of the placenta from its attachment. In this separation the villi of the chorion remain intact while a portion of the decidua serotina is torn away and remains attached to the placenta. Then the uterine blood vessels are torn open and gape; in case speedy uterine contraction does not take place it is evident that serious hæmorrhage will result. The placenta, with the foetal membranes, is expelled from the cavity of the uterus into that narrow cylinder formed by the lower segment of the uterus and the cervix; there it remains until abdominal pressure or its own weight causes it to gravitate towards the vulva. At the same time continued uterine contraction diminishes the lumen of the open blood vessels and arrests the hæmorrhage by the formation of blood clots, that is, by thrombosis.

The interior of the uterus after labor is completed has been compared to the wound following the amputation of an extremity, but the comparison is inexact. The patulous mouths of the blood vessels have been closed by thrombosis, a process, as I have before stated, quite exceptional in physiology; a portion of the decidua serotina which still remains within the uterus gradually exfoliates and a new mucous membrane is formed by abundant proliferation of new cells accompanied by a pouring out of serous exudation. The wonderful process of involution is now inaugurated and, in the course of time, the uterus returns to a condition which, barring accident, approximates its condition prior to pregnancy, as I have already described in detail.

It is evident, without any extended explanation, that the state of affairs within the uterus at this time is potentially dangerous. There is the possibility of imperfect contraction or relaxation of the uterus as well as the possibility of incomplete thrombosis. In either event, the result is postpartum hæmorrhage. There is also the danger of embolism, for in the placental wound there has been no ligation of blood vessels. The embolus may be simply air, but the results that follow may be the same as when the embolus consists of a portion of blood clot. The immediate effect in the

case of an aerial embolus, depends upon its size. In many instances—Spiegelberg thinks in nearly all—there may be at the same time a blood embolus. The presumption is certainly in favor of his explanation in most cases, but at the same time it may be stated that occasionally air has been found post-mortem in the heart and lungs in sufficient quantity to account satisfactorily for death by its mechanical obstruction. Air bubbles are also found in the veins of the placental site, the uterus and the cervix; they have also been found in the right cavity of the heart and in the first ramifications of the pulmonary artery.

When air enters the circulation death is said to be caused by the filling of the coronary arteries with air instead of blood. It may be, as Courty and Cohnheim both assert, that the right heart has no control over the air, with which it is now filled, and consequently it becomes paralyzed. The entrance of air within the uterus is favored by conditions which necessitate the introduction of the hand and by positions of the child and other circumstances which diminish continuous abdominal pressure. In shoulder, knee or elbow presentations, in cases of rupture of the uterus or placenta prævia and in Cæsarian section, when the placenta is cut into, death has occurred from air embolism. Uterine douches, as can easily be imagined, very often cause air to enter the uterine sinuses. Of the 43 cases collected by Lauffs, of which, by the way, 39 were fatal, in 17 cases it was found that air gained entrance from the use of injections. The most noticeable symptom in these cases is the immediate emphysematous crepitation that is felt when the abdominal wall is palpated. It is due to the filling of the uterine vessels with air and, when observed, permits a certain diagnosis.

The danger from blood embolism is apparent; indeed it is surprising that it does not occur more frequently. An embolus detached from a blood clot within the uterus may be so large that it completely plugs the main branch of the pulmonary artery and the result is instant death. When the obstruction is incomplete there is intense dyspnoea, distressing gasping for breath, cyanosis, a weak, fluttering pulse, tumultuous and irregular heart action, the face is pale or livid and the skin is covered with a cold, clammy

sweat. If death does not speedily ensue the symptoms disappear, but there is danger within a few days of a second attack that may prove fatal. If the embolus occurs in one of the smaller branches of the pulmonary artery the symptoms are less severe although essentially the same and the patient may recover.

An embolus of an artery may also occur, but here of course the pathology is different. An excess of fibrin is common to the blood of all pregnant women, and this excess is increased by hæmorrhage of any kind. We know that excess of fibrin favors coagulation and we appreciate the fact that coagulation is also favored by slowness or feebleness of the blood current whether it be due to hæmorrhage, to exhaustion resulting from a tedious labor or to a sudden reduction of intra-abdominal pressure after a rapid delivery. Moreover, thrombi in the veins may give off emboli which go through the heart and circulate in the arterial system until they become arrested by some artery too small to let them pass. The symptoms vary in accordance with the particular artery involved. When cerebral arteries are affected paralysis and aphasia result. When the ophthalmic artery is obstructed blindness ensues. The defect or arrest of function and nutrition is due to the obstruction of the artery which supplies the parts. When arteries of the extremities are plugged there is a reduction of temperature below the obstruction and loss of motion. Sensation is also lost or else there is severe neuralgic pain. Pulsation below the obstruction is lost and above it is increased. The nutrition of the parts is naturally interfered with; in some instances where the collateral circulation is inadequate, gangrene occurs with serious result.

In obstruction of blood vessels during the puerperium it is sometimes difficult to determine to what extent there may have been absorption of blood emboli from the endometrium and in what degree the obstruction may be due to thrombosis. I see no practical good that can result from such a differential diagnosis unless infection be present. We know that a condition of hyperinosis exists in the pregnant woman. We know that there is a quantity of effete material in the blood incident to the degenerative changes in the

uterine musculature which occur during involution. We know that weakened circulation, when a large amount of blood has been lost, increases the relative amount of fibrin present in the blood that remains. Disintegrating and separated coagula from the vessels of the endometrium may be the starting points from which extensive coagula may form. We also realize that certain conditions may favor spontaneous coagulation. It really does not matter how the blood-clot forms as far as our immediate treatment is concerned. Indeed our treatment, at best, in the serious cases is of but little benefit. The patient will be placed absolutely at rest. Ammonia, ether or alcohol may be given with a view of aiding and steadying the circulation. If the symptoms abate we will not relax our vigilance, for we know how even slight exertion may occasion a recurrence which may prove fatal.

In this condition of embolism the treatment that really benefits is the prophylactic treatment. If our knowledge of the processes attendant upon placental separation and uterine involution is at all exact we must realize the possibilities in every puerperal woman. We must understand clearly and distinctly how the formation of a coagulum is possible even in the simplest cases. We must realize the conditions that favor coagulation, and the detachment of blood-clots from the uterine sinuses, and with this realization we have but little difficulty in determining a rational treatment.

We will hesitate before giving a uterine douche or performing a curettement, for the possibility of embolism will be ever before us. We will understand that continuous abdominal pressure tends to prevent embolism whether of air or blood and we will accordingly very seriously consider the possibilities when we resort to version in cases of placenta prævia, uterine rupture or abnormal presentation, or when, for any reason, we decide to deliver the woman in the knee-chest position. In cases of depletion from post partum hæmorrhage or placenta prævia, we will remember that as the relative amount of fibrin has been increased by undue loss of blood the restoration of the blood to its normal relationship is to be effected by increasing the relative amount

of fluid in the system. With this end in view we will remember the use of enemata following *cœliotomy*. Hot water thrown into the rectum is absorbed and the sum total of fluid in the circulation is thereby increased. Large quantities of water may be given by the mouth and usually such a procedure is acceptable to the patient for undue loss of blood creates thirst. These measures are of benefit but where the loss of blood has been excessive, hypodermoclysis or saline transfusion will be resorted to, not perhaps so much to diminish the possibility of embolism, as to fulfill the indications which have arisen in consequence of the alarming symptoms due to the acute anæmia that now exists.

A drachm of common salt is quickly dissolved in one pint of boiled water at a temperature a degree or two higher than the normal temperature of the body. This makes a .60 per cent. solution and is known as normal salt solution. We now attach to an ordinary rubber fountain syringe, a small aspirating needle or the needle from a hypodermic syringe by means of a straight glass tube and rubber tubing. The fountain syringe is filled with the normal salt solution and the flow is started to make sure that no air bubbles are present. The point of the needle, which, of course, has been already sterilized by boiling, is pushed under the skin so that the solution may enter the subcutaneous cellular tissue. It is designed to introduce about half a pint in each place selected for hypodermic puncture and as a rule it is advisable to inject several pints. The fountain syringe will be lifted up or lowered to control the flow of fluid and the swellings that result from the injections will be subjected to moderate massage for perhaps a quarter of an hour in order that absorption may take place. The point of the puncture will be covered with plaster or sealed with iodoform collodion to prevent infection. Between the scapulæ is perhaps the favorite location for making the injection as is the usual practice with antitoxin in diphtheria cases. The pectoral region, the flanks, the thighs or in fact almost any portion of the body may be utilized for this purpose.

Intravenous saline transfusion is a more serious undertaking and it is not usually resorted to unless the indications are urgent. A small glass tube can be fitted to a fountain

syringe or to some rubber tubing which has a funnel at the other end. In an emergency an ordinary glass syringe may be used. The median basilic vein is usually selected; it is cut down upon and two ligatures about half an inch apart are placed under it. The distal ligature is tied securely and the vein is cut into sufficiently to allow the insertion of the glass tube which is held in place by tying the proximal ligature. Of course the flow of normal salt solution is started and is well under way before the tube is inserted; the flow is regulated by raising or lowering the fountain syringe. Ordinarily half a pint to a pint will be enough to inject. The effect on the pulse is noticeable often after a few ounces have entered the circulation. When a sufficient quantity of the saline solution has been injected, the glass tube is withdrawn and the incision closed by plaster or collodion. It is, I trust, superfluous for me to say that asepsis should prevail in regard to the skin and the operator's hands.

Now a few words more as to prophylaxis. With proper understanding of the conditions that exist in utero in every puerperal woman must come the realization of possible embolism or thrombosis in any case. It ought to be self evident that the puerperal woman needs *rest*. I know that we read about the Indian woman dodging behind a bush for a short time and then rejoining her companions on the march with her papoose slung over her back. I delivered a Swede woman of her tenth child about a week ago and the next morning she was up and dressed and opened the door for me when I called to see her. We have heard of women doing a day's washing on the day following their confinement, but I beg you to believe such practices are always prejudicial and may be the cause of very dangerous complications. Many a woman has died instantly of embolism simply because she turned about quickly in bed. You will, therefore, if you are wise, insist that your puerperal patients remain quietly in bed for at least a week and in most instances for two weeks. You will deprecate any undue exertion, for while embolism is a comparatively rare occurrence it must be acknowledged that it might occur in any case.

When the labor has been of a serious character, when

the patient has suffered an unusual loss of blood from any cause, when eclampsia has occurred or there is some evidence of infection it must be remembered that the possibility of the supervention of embolism, thrombosis or metastatic abscess formation is increased and our precautions should accordingly become more active.

I show you a case of thrombus or hæmatoma of the vulva. The patient is three months pregnant and has always been well. Her lover demonstrated his affection for her last night when he was wild with drink. He gave her sundry blows upon the body and finally kicked her on the external genitals. The patient cried aloud with pain and fell over on the bed in a faint. When she came to she was unable to walk and the pain at the vulva was excessive. The patrol wagon was called and she was brought to the hospital on a stretcher. She was immediately put to bed, a hypodermic injection of a quarter of a grain of morphine was given and an ice bag was placed against the swelling that was noticed at the vulva.

Let us look at this swelling. It is the size of an orange, blue in color and recalls the appearance of a large external hæmorrhoid. Like a hæmorrhoid it is due to hæmorrhage, for the kick that the patient received ruptured blood vessels and caused the accumulation of blood which constitutes this tumor. It includes, as you see, the left labium majus and extends downward upon the perineum. It fluctuates and is tender to pressure, but the patient tells us the pain has very much diminished since last night. It is evident no further hæmorrhage is now taking place. We will gently wash off this tumor with a boric acid solution and will protect it from pressure by sterilized gauze. Now that hæmorrhage has ceased we will no longer apply the ice bag unless the patient should again complain of pain. She will be kept in bed for perhaps ten days and the probabilities are that the blood will be reabsorbed.

A collection of blood in the areolar tissue about the vagina or vulva occurs somewhat frequently as the result of traumatism. It occurs in pregnant or parturient women but rarely,—Winckel claims but once in 1600 births. In multiparæ it is noticed oftener than in primiparæ but,

strange to say, even extensive varicose veins do not seem to be a predisposing cause. When there is a rupture of the vaginal mucous membrane that covers the blood tumor the hæmorrhage is apt to be alarming and difficult to control. Sometimes there will be free hæmorrhage and at the same time blood will burrow in the areolar tissue, forming a hæmatoma. Occasionally a blood vessel will give way during the latter weeks of pregnancy but usually the injury to the veins is inflicted by the passage of the child's head. We do not, however, find as a rule, that the tumor forms immediately after the birth of the head. When the head is relatively large it is not uncommon for laceration of the vagina or perineum to occur and at times the hæmorrhage from these lacerations is excessive, being dependent upon the character and extent of the injury as I have often explained to you. Here, of course, the treatment is self-evident.

Where a thrombus forms the hæmorrhage that causes it, is usually due to the effects of pressure upon the walls of the veins which induces necrosis and subsequent rupture so that blood escapes into the areolar tissue. The tumor may show itself soon after the birth of the head, but it is more often seen some days later. In rare instances it would seem to be due to excessive muscular exertion, as Helfer observed in one case on the twenty-first day of the puerperium.

The location of the thrombus depends upon where the rupture of blood vessels take place. Usually it is below the pelvic fascia and the extravasated blood extends into the labium majus or the perineum, as we see in the case before us. If hæmorrhage occurs in the subperitoneal cavity of the pelvis, that is between the pelvic fascia or the levator ani muscle and the peritoneum, the tumor may extend upwards along the venter of the ilium into the subserous areolar tissue even to the kidney, or it may push up the peritoneum and extend along the abdominal wall as high as the umbilicus or even higher. In fact free blood within the pelvis may pursue the same course that pus does. Usually the hæmatoma is on one side only but, if the hæmorrhage is excessive, it may extend over to the other side; in rare instances it has been observed simultaneously on both sides.

Hæmatoma also occurs in the broad ligament or in the

iliac fossa, sometimes attaining a considerable size without producing noticeable symptoms. Such tumors are often unrecognized or unsuspected for they are not visible from the vagina. They may be without much difficulty differentiated from pelvic abscesses for they form round bodies gradually becoming firmer from day to day as coagulation and absorption takes place and there is very rarely pain or rise of temperature. They are not easily mistaken for ovarian cysts if different examinations are made at intervals of several days for the changes that take place in a hæmatoma will not be likely to escape recognition. Their differentiation from hæmatocele, pyo-salpinx, ectopic gestation, peritoneal abscess or abscess of the ovary requires no special explanation at this time. These latter conditions are recognized by the clinical history and the evidence of pus in the pelvis or else they present symptoms of such importance that operative interference is immediately called for, in which event the true condition of affairs becomes apparent. I mention now hæmatoma of the broad ligament so that you may not think every fluctuating mass felt in the pelvis by bi-manual examination is necessarily a collection of pus.

When hæmatoma of the vulva or vagina occurs the pain is usually pronounced and it increases in accordance with the rapidity with which the hæmorrhage takes place. Sometimes the quantity of blood poured out is so great that the patient faints and exhibits other symptoms of acute anæmia. Death from hæmorrhage has never occurred, so far as I know, unless the tumor has ruptured. In that event, when the pressure of the extravasated blood becomes sufficient to break through the skin or the vaginal mucous membrane, the hæmorrhage may become excessive and produce a fatal result.

If the tumor is small the usual result is resorption. The watery portion of the blood is absorbed and the blood-clot becomes diminished in size and finally encapsulated. If the tumor is large the pressure may in time cause a rupture of its walls so that the blood-clot and a certain amount of dark, fluid blood will escape. The rupture may occur through the skin, the mucous membrane or perhaps into the

rectum. It exposes the patient to new dangers, for another hæmorrhage may start up, or suppuration may occur with all its possibilities of septic infection. In addition to all this, there may be an ulceration of the parts resulting in the formation of fistulæ or large cicatrices.

It is not difficult to diagnose a hæmatoma of the vulva or vagina. There is no other tumor of the parts that presents the same characteristics. It occurs quickly, with signs that indicate loss of blood; it is elastic throughout, often fluctuating. It will not be mistaken for a cyst of the vagina for there will be a bluish discoloration of the overlying skin and mucous membrane. Moreover, if you have examined the patient prior to labor, as I invariably recommend and practice, no vaginal cyst, large enough to do harm, can escape your observation.

As regards the treatment of a hæmatoma, it is evident that hæmorrhage is to be limited, coagulation favored and suppuration avoided. With these ends in view, we apply ice-bags to the tumor and we endeavor to compress it, being careful, however, that we do not rupture it. If the hæmorrhage has apparently ceased, it is good policy to leave the tumor alone. In favorable cases it will gradually diminish in size and eventually disappear. Should the tumor be very large and should its rupture seem imminent, it may be advisable, some days after its formation, to incise it freely and to turn out the clots. If it now should commence to bleed the cavity must be packed with strips of sterilized gauze. If suppuration should occur, it must be treated like any other abscess by providing adequate drainage and by adopting methods which secure healing from the bottom.

It may happen to you, as it has to me, to see a vaginal hæmatoma form during the progress of labor. Such a complication of parturition is full of danger, as can easily be imagined. The hæmorrhage may give rise to a tumor that by its mere presence may mechanically interfere with the passage of the child. Moreover when the head is delivered, who can tell how much damage may have been done? The tumor may have been ruptured and serious hæmorrhage may be taking place while we are awaiting the delivery of the body. If it is noticed that a thrombus has formed

during labor, firm compression should be applied and maintained by pieces of gauze held in the hand. As the head descends the tumor should be pushed up so that, as far as possible, all uneven pressure may be avoided. The delivery of the child should be expedited and compression of the thrombus should be resumed while the placenta is being expelled. As soon as labor is concluded the immediate danger is past. The ice-bag may now be applied but not in such a manner that the discharge of the lochia is interfered with.

Suppose the thrombus ruptures just before the head impinges upon it or immediately after the birth of the child? One thing is certain, we will not try to arrest the hæmorrhage by using solutions of the chloride, or sub-sulphate, of iron or by the use of the dry powder as most authors recommend. We know too well the dangers of such a procedure and we will not run the risk of embolism, metastatic abscess formation or septic infection especially when surer means of controlling the hæmorrhage are at hand. If the thrombus ruptures or it become probable that it will do so as soon as the head presses on it, we will quickly make a free incision, turn out the clots and fill the cavity with strips of gauze. As the head now descends, even compression is made upon the ruptured blood vessels and the hæmorrhage is controlled, at least to a considerable extent. We know that when the head is born no further compression will be made until the body of the child shall in turn press against the gauze and we remember that in normal labor, a certain period of time elapses after the birth of the head before the further progress of the labor—quite enough time, often, to permit, under these conditions, very serious hæmorrhage to take place. We have applied compression with our hand until the head has sufficiently advanced to continue this compression. We now make haste by forceps, by abdominal compression and perhaps by episiotomy to expedite labor so that the compression already applied to the bleeding vessels may continue uninterruptedly. Should there be any undue delay in the delivery of the head it is possible our fingers may be introduced around the neck to make sure that adequate compression is being maintained. As soon as

the child is born we again insert our hand in order that the compression may continue until the hæmorrhage is practically controlled.

Suppose in spite of these efforts the hæmorrhage should continue? Under these conditions I should place the patient in the exaggerated lithotomy position upon a table, insert vaginal retractors and by means of forceps and ligatures I should try to locate the bleeding vessels and control the hæmorrhage probably by tying the tissue *en masse* for I fear it would be impossible to isolate individual veins and arteries.

In this connection I now ask your attention to phlegmasia alba dolens, a case of which you see in this patient who has just been brought into the amphitheatre. Her history is incomplete. Two weeks ago she was delivered, by a midwife, of her first child without appreciable difficulty. During the first week of the puerperium there was probably slight infection, as shown by moderate rise of temperature and some pelvic pain. Three days ago there developed severe pain and some swelling in the region of Poupart's ligament on her left thigh. The swelling extended downward until it involved the entire left leg which is now, as you see, at least twice the size of the right leg. It is also glistening white in color, exceedingly tender and somewhat cedematous, that is, it pits slightly on pressure. Since the patient's admission two days ago she has been given Rochelle salts to secure daily bowel movements and hypodermic injections of morphine to relieve the pain which has been excessive, especially when the leg has been moved. A layer of absorbent cotton enveloping the leg is held in place by a roller bandage, applied from the toes up, just tight enough to secure the cotton without attempting to make any compression. The leg is elevated, as you see, and is immobilized by pillows so that there shall be no jarring which would increase the pain.

Now what is this condition of phlegmasia alba dolens? It is popularly called "milk leg" but it is needless for me to tell you that all idea of a metastasis of milk has long since been abandoned. Is it a thrombosis of some of the veins in

the thigh or is it due to an extension of infection from the veins of the uterus? Has there been an infection of the areolar tissue? It is not unlikely all these factors may, in part, at least, bear some etiological relationship to this condition in certain cases. It must moreover be stated that all swellings of the leg during the puerperal state cannot consistently be included in the definition.

We often find thrombosis of the veins of the leg, due principally to varicose conditions incident to pregnancy and the hyperinosis which exists at this time. The small, subcutaneous veins of the calf are especially liable to be affected. At the time of labor the thrombi already formed enlarge or new ones may develop. The pregnant uterus presses on the vena cava or the iliac veins, as we know. Sometimes severe uterine hæmorrhage increases the relative amount of fibrin in the blood. At other times long continued illness may diminish the force of the heart's action and then extensive exudates within the pelvis may mechanically interfere with the venous circulation and in this manner favor thrombosis. Still another cause, bearing upon the treatment of this condition, has been mentioned by Gustav Braun. He relates a case where, in consequence of inversion of the uterus, all four extremities were tightly bandaged for nineteen hours. On the third day thrombosis of both legs occurred.

Thrombi of this character rarely extend upwards beyond Poupart's ligament; they do not disintegrate but are either absorbed when the lumen of the veins is restored to the natural condition or else they remain permanently as cords obstructing and destroying the veins in which they have formed. They occasion no symptoms or at best but transient pain unless they become infected. In that event, the walls of the vein become inflamed and perhaps a minute abscess discharges through the skin or emboli are swept into the circulation and cause metastatic abscesses or sudden death from their arrest in the pulmonary artery.

When thrombi occur in the crural, popliteal or saphenous veins there is œdema on account of the obstruction, usually accompanied by severe pain. This condition is described by some authors as a variety of phlegmasia and the

corded appearance of the obstructed vein has been pointed out as a pathognomonic symptom. Others believe it better to sharply differentiate the two conditions and they call attention to the fact that here the œdema commences at the foot and extends upward whereas, in the condition they designate as phlegmasia, the œdema appears first on the thigh and is often confined to that region. These authors, at least several of them, do not hesitate to assert that the primary cause in phlegmasia is infection of the pelvic cellular tissue and that when thrombosis occurs it is a secondary result due to the pressure caused by inflammatory swelling.

Take your choice of these two explanations but learn, above all things, to appreciate the facts regarding thrombosis and embolism and realize also how the seriousness of these conditions is increased by infection. In many cases that are brought before you the exact etiology will be difficult to determine, nor is it essential as a means of instituting consistent treatment.

Thrombosis of the veins of the legs also takes place through the hypogastric and common iliac veins which communicate with the veins of the placental site. A thrombus of the common iliac vein does not, as a rule, completely plug it and cut off all circulation. In the crural vein obstruction becomes complete in time even if it is not so in the beginning, and as a consequence œdema occurs and extends rapidly upwards often above the thigh. The important characteristic of a thrombosis of this character is its direct relation with the endometrium. It is usually due to infection and it is probable, more often in the case of the pelvic veins than in the veins of the thigh, that suppuration will occur with its attendant dangers of embolism and metastatic abscess formation. Sometimes thrombosis occurs in both legs, but not as a rule simultaneously. There is more often an interval of one or two weeks and the infection in such cases is apt to be general and often ends fatally.

With this knowledge of the pathology of thrombosis it does not surprise us to observe that phlegmasia occurs in women who are not pregnant as well as in men. It is not necessarily always observed in the lower extremities. It

has been associated with tuberculosis, chlorosis, typhus fever, dysentery and somewhat frequently with carcinoma. Virchow has recorded a number of cases of cancer of the stomach where phlegmasia occurred, in some instances in the arms and in other cases in the legs. Fordyce Barker tells of a woman, fifty-two years of age, in whom he diagnosed uterine cancer simply on account of a phlegmasia of the left leg.

As a rule the symptoms are pronounced and unmistakable. There is pain somewhere in the leg or thigh, followed by swelling. There is usually a chill followed by rise of temperature and acceleration of pulse. There is complete loss of power and often loss of sensation as well. In a week or so both local and general symptoms begin to subside, and if no serious infection has taken place and no complication occurs, which, for your comfort, I will say is rather exceptional, the function of the leg is gradually restored, although for weeks or months there may be some swelling and impairment of motion.

The course of phlegmasia and of thrombosis is very much alike. If appreciable infection occurs there is suppuration with its possible sequelæ. The important factor in the treatment is rest, and from what I have already said it is manifest that external applications are of little benefit and that massage or the rubbing on of liniments or embrocations may be dangerous. To apply belladonna ointment with the expectation of relieving pain is, to my mind, about as sensible as to sprinkle morphine on a strangulated hernia. Bandaging gives relief, as it does in rheumatic and gouty joints, but the bandages must not be put on too tight. If there is infection and abscesses form anywhere they will receive due attention by incision, drainage or irrigation as may be deemed advisable. Otherwise the patient will be kept at rest, the leg will be elevated and immobilized, morphine will be given to control the pain, and in the course of time, if all goes well, the swelling will subside although the œdema may persist for weeks or months and may necessitate the continued use of a rubber bandage or an elastic stocking.

A CASE OF ABDOMINAL PREGNANCY WITH TUBAL ABSCESS COMPLICATION.—By D. S. Fairchild, M. D., *Clinton, Ia.*

Mrs. M— came under my care July 14th, 1897, presenting the following history: For some months she had suffered from a pelvic trouble attended with pain and a discharge of pus from the vagina. About the first of May she was taken with a severe pain in the pelvis which was followed by chills and fever. This condition continued until she came under my care. About three or four weeks before I saw her a mass was observed in the right iliac region which steadily increased in size. Examination revealed a slight sense of fluctuation in the mass; this fact taken in connection with the history of the case—which was that she had suffered for many months from a pelvic disease attended with an intermittent discharge of pus from the uterus and with pain and tenderness in the ovarian regions—left no doubt in my mind as to the existence of tubal inflammation and pus in the pelvis. From the appearance of the acute symptoms in May she had had a profuse discharge of pus from the uterus which varied in abundance with the amount of pain in the pelvis and the fever. When the discharge was most profuse the pain and fever materially subsided and when it became less in quantity the pain and fever increased. The patient was much emaciated and presented marked evidence of chronic septic infection. She was having her regular menstrual periods but always at such times the symptoms were aggravated. A physical examination showed that apparently the pelvis was filled with inflammatory exudate, most marked in the right side but filling the cul-de-sac and extending across into the left side. Under an anæsthetic a sense of deep fluctuation could be determined. Dr. Wright, of Carroll, who was in town kindly examined the case and as there was great tension in the right side, as she was suffering from serious symptoms of sepsis and as the patient

was not regarded as being in a safe condition to move to the hospital, we decided to make an exploratory incision over the mass and if it had contracted adhesions to the abdominal walls to incise and drain as a temporary means of relief until she was in a safe condition to be moved to the hospital for a vaginal hysterectomy, which we believed to be necessary. On reaching the tumor, after careful preliminary preparations, we found that the peritoneal surfaces were not united and that any effort in the way of obtaining drainage in this direction would result in infecting the peritoneum. We therefore closed the wound. This was done the second day after I saw her. After this examination and operation the flow of pus from the uterus increased and she seemed to improve, the temperature lessened and the mass somewhat decreased in size. I advised her that the condition was incurable without an operation and that the danger was constantly increasing from the increase of infection. She improved somewhat—to the extent of sitting up a part of the time—but at each menstrual period the pain and fever lighted up with great intensity. She however declined any operation and I saw her only occasionally—at such times when the pain and fever would come up. It was now noticed that the mass was increasing in size and on Oct. 25th I found it extended on the right side to a line about half way to the umbilicus. The level of the left side was lower and over the region of the uterus still lower, i. e., the largest part of the mass was in the right iliac region, became smaller in the middle line and increased again somewhat in the left iliac region. Her condition now became so serious that we abandoned all idea of an operation. She was greatly emaciated and unable to take food; temperature 104°, pulse 130 and very weak. However in a few days she improved somewhat and she was taken to the hospital. She was now convinced that she wanted to take what chances an operation might afford. The diagnosis had all the time been extensive inflammatory exudate with pus formation and general septic infection. On Oct. 30th, with the assistance of Drs. D. S. Fairchild, Jr., Hofstetter and Coveny, I prepared to make a vaginal hysterectomy for the relief of the disease and to establish drainage.

The uterus was anteflexed and crowded over against the pubis. On entering the posterior cul-de-sac I found some pus cavities which discharged freely, and higher up I came in contact with a much larger sac which on exploration ruptured and discharged a considerable quantity of dark fluid. Then upon passing my hand into the sac I found a foetus of six or seven months development. The situation was anything but pleasant. The foetus was, however, quickly delivered posterior to the uterus and with it a considerable part of the placenta which was in part loose in the sac and the remainder attached to the mesentery and intestines. The wall of the sac was attached to the posterior and upper surfaces of the uterus and was reflected over from the uterus on to the intestines and mesentery and back over the rectum. Great care was observed not to make traction on the sac. The attachments of the sac to the uterus were extensive and firm, and to save the danger of hæmorrhage the organ was promptly clamped and removed. Such other portions of the sac as could be easily peeled off were removed. The placenta was removed as far as possible without doing violence or exciting the risk of hæmorrhage. The omental attachments were separated and the involved omentum ligated and removed. There was a surprisingly small amount of hæmorrhage. This was accounted for in part by the fact that a considerable portion of the placenta was already separated. The foetus was well developed but undergoing maceration. The vascularity of the omentum had no doubt maintained the nutrition of the foetus until I presume a week or ten days previous to the operation when a partial separation occurred leaving the child without an adequate blood supply. There was pus in the left tube and surrounding pelvic tissue but its exact relation could not be determined with the opportunities the exhausted condition of our patient afforded. The right tube was free from any purulent accumulation but refused the passage of a probe, i. e. was closed from a point one inch from the uterus outwards.

The patient rallied from the operation. The clamps were removed on the second day, the gauze, loosely introduced into the vagina and sac, was removed every three

hours, bringing with it masses of placenta and membranes which we could not have removed without endangering the intestines. The drainage was perfect—much better than by the abdominal route—but the patient gradually sank and died from exhaustion on the fifth day.

If the full pathological condition had been apparent at the time of operation I should not have ventured to take the vaginal route. I congratulated myself afterwards that I did so for in her exhausted condition the shock of abdominal section would no doubt have been immediately fatal. The facility of the operation and the fullness of the drainage convinces me that the only chance lay with this method of operating.

The special feature of interest in this case was the co-existence of pelvic inflammation and pus formation with abdominal pregnancy. The woman had suffered for several years from a pyosalpinx. On May 1st a severe attack of pelvic pain probably announced the escape of the products of conception from the tube and an accession of the pelvic inflammation.

Abdominal attachments were formed and the foetus went on to develop until near the seventh month without any apparent infection coming from that source. At the same time chills and fever developed, which were followed by chronic sepsis attended by a constant rise of temperature varying from 99° to 104°. The child lay transversely in the abdomen with the breech well crowded down in the pelvis, the limbs were folded on foetal abdomen and the head occupied the right iliac region. Outside the foetal membranes, and to the left, was located the pus accumulation. The irregular, indistinctly fluctuating mass occupying the pelvis and lower abdominal region caused great confusion in our minds as to the pathologic condition but the history, the symptoms, and the physical examinations influenced us in favor of the one element of the case found to the exclusion of the other of which there were absolutely none of the usual signs. If the heart sounds had been looked for it is possible they might have been found; although when I last saw her, previous to the last sickness, it was too early, and when I first saw her previous to operation they had stopped

THE ANATOMY AND PHYSIOLOGY OF HENLE'S TUBES: WITH EXPERIMENTAL CITATIONS AND CLINICAL DEMONSTRATIONS.--By May Michael, *Chicago*.

(Being an essay which received Honorable Mention in the last competition for the 'Danforth Prize' at the Northwestern University Woman's Medical School.)

The following points will be considered in describing the structure of Henle's tubes: (1) their general structure and arrangement in the kidney; (2) their minute structure; (3) the blood supply; (4) the lymphatic system and (5) the nervous regulation.

The situation and general arrangement.—The kidney is divided for means of description into the cortex, or outer layer, the boundary layer and the medulla. Henle's loops are found in the cortex and boundary layer, constituting the chief part of the medullary rays, and in the pyramids of Malpighi. On examining a fresh, longitudinal section of a kidney these medullary rays are seen as minute lines passing through the cortex and boundary layer to the medulla. This arrangement can be seen much more satisfactorily if a longitudinal microscopical section, preferably stained in eosin and logwood, is examined under a low magnifying glass. It can then be seen that these minute lines are made up of groups of lines which increase in number as they approach the medulla, thus forming pyramids—the pyramids of Ferrein. The apices of these pyramids correspond to the cortex, the bases to the bases of the pyramids of the medulla. The medullary rays are continued into the medulla and appear as oblique lines running from the bases toward the apices of the pyramids of Malpighi.

The size and form of Henle's tubes is best studied in teased preparations; their distribution in the kidney in longitudinal microscopical sections. If care be taken in teasing the specimens the whole, or nearly the whole, tubule can be obtained.

Henle's tubule begins as a narrow, straight tubule, nine

to fifteen microns in breadth and for a short distance retains this uniform size. It then widens, turns upon itself and ascends parallel to the first portion. At a short distance from the turn the tube again widens until it is about twenty microns in diameter, loses its straight character and becomes spiral in outline. Continuing in the same direction and still retaining this spiral outline it again becomes narrow until at its termination it measures only about twelve microns. These measurements are not constant, the descending limb being at times as wide as fifteen microns, the ascending as thirty. Sometimes the tube attains its maximum width before the loop is formed, at other times it retains the narrow diameter until after the turn.

Thus Henle's tubule consists of three parts: (1)—a narrow, straight, descending limb; (2)—a loop; and (3)—an ascending limb which, in turn, consists of a straight portion, a wide spiral portion, and a narrow spiral portion.

From the study of longitudinal microscopical sections the following facts are obtained. The descending limb of Henle's tube enters the medullary ray in the boundary zone and runs through the boundary zone into the medulla. The loop is situated in a pyramid of Malpighi at a varying distance from the apex. The tubes never pass down as far as the apices of the pyramids. The straight portion of the ascending limb is also in the medulla. The wide spiral tube enters the medullary ray again and courses through the boundary zone. The narrow terminal portion is in the cortex.

The minute structure of Henle's tubes.—Henle's tubes are composed of a basement membrane lined with epithelial cells. The basement membrane is a tough, elastic structure, thicker in the descending limb than in any other portion of the tubule. In sections stained with silver nitrate this membrane appears as a black thread dotted here and there with small black points which resemble stomata. In sections stained either with carmine or logwood the membrane seems homogeneous except here and there where a nucleus is visible. It is formed by a condensation of the connective tissue which in the foetal kidney exists in quite an abundance between the tubes—thus of flattened expanded fibres with flattened connective tissue cells in the interspaces.

The epithelial cells vary in different portions of the tube. In the descending tubule clear, flat epithelium is found with prominent nuclei which project into the lumen. The nuclei on either side of the tube are not directly opposite each other, that is, the nuclei on one side are opposite the junction of two cells on the other side of the tube. This gives a sinuous character to the lumen. Usually this variety of epithelial cells extends into the loop and even into the ascending limb, but not invariably so. Sometimes the lower portion of the descending limb and the loop are lined with cuboidal cells. The change in character of the cells goes hand in hand with the change in diameter of the tubule. In those tubes whose diameter remains unchanged until the loop is formed the epithelium retains this squamous character, but in those in which the diameter is enlarged before turning the cells become cuboidal in character. The cells having once become cuboidal retain this shape to the end of the ascending limb. There are, however, some differences between those in the wider and those in the narrower part of the ascending limb. If the tissue be hardened in ammonium chromate (5%) and then stained with logwood or carmine the cells in the lower part of the tube show *indistinct* rods situated in the outer half of the cell, and a faintly stained nucleus. Those in the upper part show coarse distinct rods and a deeply stained nucleus.

If the tissue be hardened in formalin and then stained with logwood these striations are not so plainly seen—the protoplasm appears granular and there is a deeply-stained, oval nucleus near the lumen of the tube. The size of the cells and the amount of granular material in the protoplasm varies with the stages of secretion.

The blood supply of Henle's tubes.—The arteriæ propriæ renalis, divisions of the renal artery, enter the kidney through the columns of Bertini (the portions of the kidney between the pyramids of Malpighi). Having reached the apices of the columns they form arches—the arteriæ arcuatæ over the bases of the Malpighian pyramids. From these arches two sets of branches are given off—namely those to the cortex, the interlobular arteries, and those to the medulla, the arteriæ rectæ. Henle's tubes are supplied with blood from

both these sets, the medullary rays from the interlobular arteries and the tubes of the medulla from the arteriæ rectæ. As the arteriæ rectæ enter the medulla they break up at once into a capillary network surrounding the tubes. A few twigs from the interlobular arteries join this network. The interlobular arteries, however, first pass to the Malpighian bodies and form the capillary network of the glomeruli. The efferent-vessels from the glomeruli break up into two sets of capillaries, one to the convoluted tubes and the other to the tubes of the medullary rays. The veins follow the arteries. The interlobular veins are formed by the union of the capillary plexuses of Henle's tubes with those of the other tubes of the cortex. These join the venæ rectæ from the medulla to form the venæ arcuatæ. Further distribution of the vessels must be ascertained from microscopical sections of injected kidney. Under a low power (Bausch & Lomb $\frac{1}{2}$) an elongated meshwork can be seen surrounding the tubes of the medullary rays and from this meshwork fine, delicate twigs can be made out piercing the basement membrane and surrounding the cells. This is not true of all portions of the tubes however, and when the section is examined under a higher power ($\frac{1}{2}$ objective) it can be plainly seen that it is chiefly in those tubules lined with cuboidal cells, namely Henle's ascending limbs (considering Henle's tubes only), that the delicate vessels surround the cells although in the descending limbs a few capillaries can be seen here and there between the cells. In the medulla the same arrangement is found; the long-meshed network encircling the tubes and the fine, delicate vessels surrounding the individual cells, but here again not to nearly as marked a degree as around the cuboidal cells of the ascending limbs.

The lymphatics of Henle's tubes.—Two sets of lymphatics are found in relation to Henle's tubes—one represented by slits in the framework of the tubes, the other by true lymphatic vessels lined by endothelium, which surround the tubules and which, according to Ryndovsky, penetrate the basement membrane. Both sets terminate in a plexus beneath the capsule. Vessels from the plexus empty into the lumbar glands.

The nerves of Henle's tubes.—The renal nerves are derived from two sources, (1)—the solar plexus which receives branches from the semi lunar ganglia, the greater and lesser splanchnic nerves and the right vagus; (2)—branches from the lesser splanchnics which join the renal plexus directly without entering the solar plexus.

Microscopical study has revealed the following distribution of the nerve fibres. As the nerves enter the kidney at the hilus they break up into; (a)—a plexus to the arteries and (b)—a plexus to the tubules. The plexus to the arteries of Henle's tubes does not show any difference from the plexus to the other arteries of the kidney. Nerve fibres accompany all arteries of the cortex, large and small, running on their sheaths and ending in small bulbs in connection with the muscle fibres. Ganglionic enlargements of the nerve fibres appear everywhere in the kidney. No cell structure has been demonstrated in these ganglia. No nerves have been found on the arteriæ rectæ. The nerve plexus to the tubules is derived from the arterial plexus. Here and there small nerve fibrillæ leave the plexus and join other fibrillæ to form a network around the tubules. Many end in bulbs, on the basement membrane of the tubes. It has been incorrectly stated that Berkley found fibres piercing the membrane and ending between the cells—but in the original article printed in *Johns Hopkins Hospital Reports* he says that "fibres having a closer relation than simply to enwrap the tubes have not been found."

The function of Henle's tubes.—To determine the function of any organ these methods of investigation are available, (1)—experimental methods; (2)—study of normal structure and comparison with structures whose functions are known and (3)—the study of pathological changes.

Applying these methods to Henle's tubes three problems are to be solved, (1)—what is the function of the cells of the ascending limb? (2)—of the descending limb? and (3)—what is the function of the tubes as a whole?

Heidenhain performed the following experiment on the kidney of one of the lower animals. He cut the spinal cord just below the medulla and injected twenty cubic centimeters

of the saturated solution of sodium sulphindigotate into the veins. Ten minutes later he killed the animal. On examining the kidney a band of blue coloration was seen extending the whole breadth of the cortex and boundary layer. Microscopical examination revealed grains of the coloring matter in the cells of Henle's ascending limb and the cells of the convoluted tubules but none in the cells of the descending limb.

Nussbaum's experiment:—The kidney of the newt has two blood supplies—one, the renal artery to the glomeruli—the other, the renal portal vein to the tubes. On tying the renal artery and injecting substances as urea into the blood it was found that these substances were still eliminated showing that the cells of the tubules must have been the active agents in the process.

In the kidneys of birds urates have been found in the cells of Henle's ascending limb and in those of the convoluted tubes.

These experiments are the first steps in the proof that the cells of the ascending limb of Henle's tube are true secretory cells—i. e., have the power of removing from the blood such substances as urea;—also the first steps in the proof that the cells of the descending limb have no secretory function, for solids have never been found in these cells after experimental physiological activity.

From histological study further evidence as to the truth of these facts is obtained. Comparing the cells of Henle's ascending limb with cells which we know positively are true secretory cells, for example those of the salivary glands, many resemblances are apparent. The cells of the alveoli of these glands are cuboidal, granular cells with large nuclei and are very intimately connected with the blood supply. This description with very little modification could be applied to Henle's cells. And again the changes during functional activity of the salivary glands resemble changes which have lately been observed in the cells of Henle's ascending limb, namely the cells gradually enlarge, the striæ disappear and the lumen becomes almost completely occluded. The secretion accumulates as a clear vesicle near the

nucleus of the cell and when completely formed is discharged into the lumen.

On the other hand, nowhere in the economy are squamous cells found taking an active part in performing the function of the organ of which they are a part. They occur as *protective* cells, as those of the mouth or œsophagus, or as the lining cells of conducting tubules, as the ducts of glands. It is true that in the mammary gland these flat cells line the alveoli and during functional activity of the organ become secreting cells. The first in this process is, however, the *change in form from squamous to columnar*. Does not this change also occur in the cells of Henle's descending limb? It is impossible, for never would the kidney need to be more functionally active than after the injection of foreign substance into the blood, as in Heidenhain's experiment; yet even in this case the cells retained their clear, flat character.

The uriniferous tubes of the frog's kidney consist of four parts; a short tube lined with ciliated cells,—one lined with cuboidal cells,—a narrow tube lined with clear ciliated cells and one lined again with cuboidal cells. Obviously the second ciliated portion corresponds in the human kidney to Henle's descending limb.

The function of ciliated cells is *conduction*. Reasoning from the analogy the friction of the cells of the descending limb of Henle's tube is also conduction.

From the study of pathological specimens little information on this subject has been obtained. It has been observed that in almost all specimens the cells of Henle's ascending limb have been among those which are first and most completely damaged. It has also been observed, and this is especially true in specimens of chronic parenchymatous nephritis, that the cells of Henle's ascending limb show the same changes as seen in the cells of the convoluted tubes. The cells of the descending limb are affected last. This is only another step in the proof that the cells of the ascending limb have the same function as those of the convoluted tubes, namely, secretion, while those of the descending limb are not functionally active cells.

Under this head, i e., the pathological study of Henle's

tubes, comes the question,—What part do these cells play in preventing the passage of albumin into the urine? It was formerly believed, and this view is still held by some physiologists, that albumin passes through the glomeruli and is reabsorbed by the cells of Henle's tubes. If this were true the presence of albumin in the urine would be at once referred to the degeneration of these cells and their inability to perform their function. Even if the primary cause of the albuminuria was not a degeneration of the cells, degeneration would soon follow from overwork, the effort to reabsorb the excess of albumin, yet many cases of transient albuminuria have been recorded in which there was no evidence of structural disease of the kidney, as the absence of casts in the urine showed. The following is a type of such a case, seen at one of the clinics at Cook County Hospital.

The patient entered the hospital in February, 1897. The diagnosis of cardiac exhaustion was made. Examination of the urine revealed a trace of albumin. Otherwise the urine was negative. This after a short time disappeared, and in April, when the urine was re examined, no trace of the albumin was apparent.

In interstitial nephritis very little and sometimes no albumin is found in the urine, as shown by these records.

Patient male, age 39—Diagnosis chronic interstitial nephritis. Examination of urine made February 21, 1897. Color, pale. Reaction, acid—Sp.gr., 1006. Amount, 2400 c. c. in twenty-four hours. Albumin, a trace. Microscopical examination revealed hyaline and granular casts.

Second case. Patient male, age 70—Diagnosis, chronic interstitial nephritis. Examination of urine—Sp.gr., 1004. Amount, 1000 c. c. Albumin, trace—Hyaline and granular casts.

Third case. Girl, age 12—Diagnosis, chronic interstitial nephritis—Examination of urine. Color, pale—Sp.gr., 1011. Amount, 672 c. c. Albumin, a trace.

Microscopical examination of specimens of interstitial nephritis revealed almost invariably degenerative changes in the cells of Henle's tubes, especially those of the ascending limb.

In cases of diabetes, very seldom is albumin found in

the urine. Lately much study has been given to the pathological changes in the kidneys of patients dying in diabetic coma—and a very marked change has been noted in the cells of Henle's tubes, and especially, in those of the descending limb.

From these clinical facts, it can be stated that Henle's cells have very little to do with the reabsorption of albumin. In the first place, if this were not true, transient albuminuria would very soon lead to permanent albuminuria, and this contrary to clinical experience. In the second place albumin would be found constantly and in large quantities in the urine of patients suffering from interstitial nephritis and diabetes, and this also is contrary to clinical experience.

What is the function of Henle's tubes as a whole? Why is it necessary to have the conducting portion, that is, the descending limb, and then a reduplication of the secreting portion? From histological study it was ascertained that Henle's tubes were surrounded by numerous blood vessels and lymphatics. This gives the clue to the first function—namely, to offer a larger surface for secretion and absorption. The function of secretion needs no further discussion; absorption does, however. It is a well-known fact that the urine when voided is in a more concentrated form than when passed through the glomeruli. The narrowing of Henle's descending limb prevents the too rapid outflow and allows the urine to come in closer contact, and for a longer time, with the veins and lymphatics and so to become more concentrated.

Another function has been attributed to the loops of Henle and that is—an accessory function to the glomeruli. To understand this the blood supply of the medulla must be borne in mind. The arteriæ rectæ come directly from the main arteries and the blood must therefore, like in the glomeruli, be under high pressure and circulate at a high rate of speed. These vessels are like those of the glomeruli in another respect, that is, they break up into a set of capillaries which are in intimate relation to the lumen of the tubes. These similarities probably indicate a similarity of function. From the vessels watery fluid passes to be taken up by the tubes of Henle. This fluid would also undergo the process

of concentration as it passes through the remaining portion of the tubes.

The arrangement of the blood vessels gives a clue to still another function of Henle's loops. If for any reason there is increased pressure in the renal veins, as, for example, from obstruction, the first effect would be a back pressure of blood into the arteriæ rectæ. The distension of these vessels exert a pressure on the tubes of Henle in the medulla—and increase the intertubal pressure, and, by back pressure of the urine, the pressure on the outer wall of the vessels of the glomeruli.

To recapitulate,—the functions of Henle's tubes are as follows, conduction, secretion, concentration of urine, accessories to the glomeruli and protection.

“If I were ill most assuredly I would not seek the assistance of a chemist, or of a physiologist, and medicine is not to be learned from the books of Claude Bernard or of Pasteur. Clinical instruction is necessary, such as long observation of patients alone can furnish. Prophylaxis, diagnosis, prognosis, therapeutics are not to be learned in scientific books. Something else is necessary—observation, long, patient observation, the old Hippocratic observation, without which there can be no good physician. Young students must be guided in the examination of patients by experienced practitioners, and no one, I presume, would be guilty of the folly of proposing to replace the clinical ward by the laboratory”—*Richet*.

ABSTRACT OF CLINICAL LECTURE RELATING TO
FOREIGN BODIES IN THE LENS AND OPERA-
TIONS FOR THEIR REMOVAL.—By Joseph
Elliott Colborn, M. D., *Professor of Ophthalmol-
ogy, Chicago Polyclinic.*

Mr. H. aged 26 years, machinist. comes to us for a trauma to the left eye caused by a small spiculum of iron from his hammer, received in April. It is now one month after this injury.

I now present him for examination: You will find a small scar in cornea just below its center. The lens is translucent with the exception of a small, opaque patch near its upper limbus and a small white spot on the capsule in line with the wound of entrance. The small dark spot in the lens gives a metallic lustre with strong oblique illumination; it is the foreign body and is suspended in the lens substance, which is rapidly softening. The lens is greatly swollen and presses the iris forward rendering the anterior chamber very shallow. There is some pain, dull and heavy, in the eye-ball, and the pink zone about the cornea indicates a low grade of inflammation in the ciliary body.

As I present him to you today he shows no marked change from the appearance of yesterday, when I saw him for the first time, but the pain and sense of weight in the eye are greater. Atropia has been freely used to dilate the pupil to endeavor to carry it beyond the foreign body. The eye must be relieved of irritation, the lens and the foreign body must be removed at once, for the slowly swelling lens is pressing upon the ciliary body and iris, causing irritation and a condition of inter ocular tension that is liable to break out at any time into an active inflammation of the inner vascular tissue of the eye. The dangers of the operation are: First, failure to secure the evacuation of the foreign body with the degenerated lens matter, and to lose it in the posterior cavity of the aqueous chamber, or, for it to be retained

in the folds of the capsule. This, I think, we can overcome by making a small iridectomy exposing the lens over the site of the foreign body, then with the capsulotome rupture the lens capsule, and make gentle but firm pressure causing a sudden gush of the lens matter containing the foreign body. The second danger is that the irritation that is established may not abate with the removal of the cause, and a protracted disturbance follow. This danger we can only lessen by aseptic and antiseptic precautions, and protracted rest and quiet for the eye.

I prefer the modified Græfe knife for making the incision, though the anterior chamber is shallow, because the incision can be made with less traction upon the eye and with greater dispatch. The iris is next incised and the lens is pressed forward into the anterior chamber. A small opening is now made through the capsule of the lens, accompanied by pressure with the fixation forceps. You notice that the lens substance and foreign body are discharged freely. The pupillary space is clear, and no toilet is necessary except to adjust the lips of the corneal wound, instill eserine to contract the pupil and keep the iris out of the way. We will bandage the eye in the same manner as following the extraction of senile cataract.

Sixty hours later: We will now inspect the eye for the first time since the operation, though the bandages have been changed, and the partially opened lids have been flushed with warm, saturated solution of boric acid.

In a young and vigorous subject, like our patient, if the lips of the wound have not been disturbed by accident, the wound should be quite firmly closed, and the anterior chamber refilled; this, you will notice, is the case. The coloboma, or opening in the iris, is in its proper position; there is no lens matter in the anterior chamber; the capsule is transparent, and the pupillary space is clear. There has been no pain since the operation, and the deep flushing in the pericorneal region has disappeared. The fellow eye is no longer irritable, and the vision is normal.

We will now dress the wounded eye with a light bandage and have it cleansed every four hours with tepid boric acid solution.

Fifth day: You now notice that the eye is normal in color and that there is no dread of light. Our patient can now be discharged with instructions to keep quiet five days longer, wear a visor shade, and wash the eye with boric acid morning and night, then return for further observation, when we will be able to inspect the deep parts of the eye, and advise when it will be safe to allow him to resume his occupation.

The chief points of clinical interest in this case, are:

First, that a piece of steel of this size should penetrate the lens, making a wound so small that the aqueous could so slowly mix with and soften the lens matter.

Second, accidents of this kind are not common, and the number of recorded cases is small.

Third, the best time to operate: Just as soon as the lens has become soft and disintegrated enough to free itself from the capsule, and before there has been sufficient irritation to disturb the interior of the eye, or cause inflammation in the surrounding tissue.

In this case we were able to locate a foreign body by ordinary means of observation. Had it penetrated deeper and become obscured by the opaque lens, we could only do the conservative and safe operation of discharging the swollen lens, and searching the debris for the missile.

In discussing the question so far we have taken into account only one class of cases, namely, cases in which the lens has been injured or affected sufficiently to interfere with its integrity and cause it to become an offending member.

Before leaving this subject, I wish to call your attention to another class of lens trauma in which the foreign body from its minute size and cleanness, does not seriously interfere with the integrity of the tissue, and may stay imbedded for years without irritation, and, if the substance is favorable, become oxidized and gradually absorbed. This has been frequently observed. In judging of the seriousness of the injury we must at once take into account this possibility in our prognosis and treatment. I think we can safely sum up in this way: A foreign body entering the lens and allowing access of the aqueous humor to the lens substance, will be followed by swelling and softening of the

lens, and serious injury to the eye, necessitating prompt extraction of the lens and foreign body.

Patient, Mr. T., aged 23 years. About two years ago he received an injury from a foreign body which passed through the cornea just to the temporal side of the pupil, penetrated the iris and pinned it to the lens, entering the lens about one-third of its length. The foreign body came from the head of a small steel punch, and the patient, a machinist, wisely kept the tool with him for our inspection. You will see that the chip was about 1 m. m. in greatest length; .50 m. m. in greatest breadth; .25 m. m. in width. It is triangular and pyramidal in shape. Judging from the shape and size of the spiculum, it must have penetrated the lens about one-third m. m. The ophthalmoscope showed but slight disturbance of the lens substance, and no evidence of inflammation of the iris at the seat of the wound. The immediate effect of the injury was but slight and the after effect has been marked by periods of irritation, slight pericorneal flushing and painful accommodation. The patient now comes for relief, as these attacks are more frequent and the period of discomfort longer than formerly.

It is now two years since I first saw this patient and I note a change of color in the iris, and a constant flushing of the pericornea in this region. The lens is unchanged in transparency; its capsule presents no disturbance in nutrition so far as can be seen, but the iris and ciliary body are being irritated by the constant interference with the pupillary movements and adjustments of accommodation.

The method of relief which I shall undertake will be to make a broad corneal incision directly over the foreign body, grasp it with iris forceps and withdraw it, using care not to press upon or in any way wound the lens. I shall also endeavor to remove all the changed iris. This narrow Graefe knife will best serve the purpose for incision, and these grooved iris forceps for grasping and removing the iris and foreign body.

You will notice that the coloboma of the iris is smooth; the hæmorrhage which has been considerable has been cleared away, and the site of the foreign body is marked by

a gray opacity surrounded by a ring of pigment. Time must be given to determine whether we have in any way disturbed the lens, in other words, whether a traumatic cataract will form.

Six weeks later: Those of you who saw this patient at the time of operation will be interested to know that the reaction was slight; the wound in the iris and cornea has healed without complication, leaving the iris free, and that the lens has not changed in transparency. There is now no pain or irritation accompanying or following the use of the eye.

I did not advise operation in this case when the injury was first received, for the following reasons:

First, the injury was received from a bit of steel that had been recently forged and was clean.

Second, there was hæmorrhage in the anterior chamber which filled the field over the site of the wound and locality of the missile.

Third, from former experiences I believed that there was a chance for the lens, even if the steel had entered it, and that it was safe to allow the foreign body to block the wound in the lens, thereby keeping out the aqueous and insuring a slower change in the lens, if one was to take place, and give an opportunity to remove the softened lens, if softening should take place, after the hæmorrhage had been absorbed.

Fourth, that nature would throw out a protecting exudate, especially about the foreign body embedded in the lens, and that this protection would keep the aqueous humor from the lens and allow the withdrawal of the foreign body without causing softening of the lens substance.

The only reason for operating now is that the iris and ciliary body are becoming irritated by the constant dragging of the iris upon the lens, and its presence in the substance of the iris. I advised operation as soon as the eye was quiet after the injury. But our patient was willing to take the chances and inclined "to let well enough alone", as he called it, till pain and discomfort showed him the danger in delay.

810 Venetian Building.

Notes and Comments.

John Winthrop, one of the early governors of Connecticut, was a physician, and at the centennial meeting of the Connecticut State Medical Society a member presented a collection of twenty-two letters addressed to Governor Winthrop, asking advice in cases of sickness.

* *

Dr. Osler said recently that the late Sir Andrew Clark, so long noted as the foremost practitioner of London, once told him, by way of explaining the slow and difficult steps of his professional development, that he had worked ten years for bread, ten years for bread and butter and twenty years for cakes and ale.

* *

The Secretary of the Michigan State Board of Health, Dr. H. B. Baker, who has long and patiently studied the question of the prevention of disease in that state, has of late been strongly agitating the prevention of consumption, and has been trying to educate the health officers and through them the people, upon the infectiousness of the disease.

Dr. Baker states that over three thousand people, in the very prime of life, annually succumb to consumption in Michigan, and that about six thousand are constantly on the sick list because of this trouble.

* *

One of the most radical examples of the progress of our race—and especially on the humanitarian side of our nature—and one that touches the practice of physic in a measure, is that which has taken place in the last two hundred years in the matter of the general treatment of the insane. It is only occasionally that we have a well drawn picture of times that far back in this particular relation, for it is something of which the civilized world is not very proud and also a topic which has not, or did not years ago, enjoy public

report and discussion so as to be well preserved to us now. However, we have found recently a description, by a writer on lunacy control, of times in England two hundred years ago which compare sharply with the methods of today. Francis Tiffany records that up to so late a date as 1770 one of London's general insane hospitals "was still regarded as the raree-show of the city, superior even to the attractions it offered the pleasure-seeker, to the bull-baiting or dog-fight. No more diverting entertainment could be devised by the average citizen for guests visiting him from the country than to take them, for a hearty laugh, to Bedlam" (the name of the hospital, corrupted from Bethlehem, a monastery before the time of Henry VIII) "to see the madmen cursing, raving and fighting. There was to be had on show St. Paul or Julius Cæsar chained to the wall, or Semiramis or Joan of Arc ironed to the floor; while the general throng, left more at liberty, were guarded by brutal keepers ready on the slightest provocation to knock them senseless with heavy clubs. The annual fees derived from this public entertainment amounted to several hundred pounds."

* *

In discussing the treatment of syphilis at the last meeting of the *British Medical Association* Whitla, of Belfast, England strongly advised the inunction method of using mercury. He much prefers the mercurial ointment of the German pharmacopœia which contains one part of mercury rubbed up with two parts of a mixture of lard and suet. The speaker said: "With such an ointment every case of syphilis can be treated more certainly and more rapidly than by all plans of mouth medication. It is very inconvenient, requires care, often the aid of an attendant, and the free use of baths; it exposes the secret of the patient's malady to those about him, and soils his bed-clothes and undergarments. These are reasons which will probably always operate in preventing the inunction plan from becoming a routine method of treating syphilis. Nevertheless it is the best of all ways for treating the disease, and in some cases it is absolutely essential to the patient's life that he resort to it.

By a careful attention to the state of the patient's mouth

enormous quantities of the antidote to syphilis may be introduced into the system without producing any effect whatever beyond the rapid cure or total disappearance of all syphilitic symptoms. I do not know of any more marked and unmistakable result in therapeutics than the results of this method in severe cases of syphilis. It may be used with advantage in all cases, but there are cases where it becomes the duty of the physician to insist upon the method of inunction: (1) In all grave attacks of the disease where the symptoms set in with unusual severity it should be resorted to. (2) In all cases where time has been already lost and the patient has not sought advice till the secondary phenomena have been in full swing for several weeks, as, for example, when the patient first seeks treatment for a retinitis, iritis, or otitis. (3) In nearly all cases of cerebral syphilis and where spinal symptoms supervene at an early stage. (4) In syphilis appearing under certain conditions after marriage. (5) In so called malignant syphilis."

* *

One of the most convincing reports upon the use and efficacy of diphtheria antitoxin that we have observed appeared in a late issue of the *Brit. Med. Jour.* (Oct. 23), and seems so eminently fair and scientific that we are glad to print one of the comparative tables, as well as to quote the introductory remarks of the author, Dr. C. P. B. Clubbe, who says:

"As there is still a doubt in the minds of many men (even at this date), both in England and America, as to the efficacy of the serum treatment of diphtheria, it seems to me to be the duty of those who have the opportunity of watching this form of treatment in a special hospital to publish their results. It has been argued that a comparison of results is often valueless because the cases have not been treated in the same place, by the same man, and are not numerically the same. These arguments will not apply to the cases now under review. All these 600 cases have been treated in the same hospital, and have been under my care. They have been treated exactly in the same way as to food, stimulants, drugs and local applications. They have all been examined bacteriologically. Cases in which the Klebs

Loeffler bacilli were not found are not even included. The only difference in the treatment is that the last 300 had serum injected.

Last 300 without serum. Females, 169. Males, 131.			
	CURED.	DIED.	DEATH RATE
Tracheotomies.....199	64	135	67.8
Simple diphtheria.....101	78	23	22.7
Total.....300	142	158	52.7
First 300 with serum. Females, 158. Males, 142.			
	CURED.	DIED.	DEATH RATE.
Tracheotomies.....129	80	49	37.9
Simple diphtheria.....171	160	11	6.4
Total.....300	240	60	20.0

It will be noticed from this table that the total death-rate is diminished by 32 per cent., so that in the 300 cases 96 lives may be said to be saved.

There were 70 fewer tracheotomies in the last series, so that the serum treatment lessens the necessity for operation in 23 per cent. of cases. The death-rate in the tracheotomy cases is decreased by 30 per cent."

Book Reviews.

A MANUAL OF MEDICAL JURISPRUDENCE. By ALFRED S. TAYLOR, M. D., Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital, London. New American Edition of 1897 from the Twelfth English Edition. Thoroughly Revised by Clark Bell, Esq., of the New York Bar. In one Octavo Volume of 831 pages, with 54 Engravings and 8 full-page plates. Cloth, \$4.50; leather, \$5.50. Lea Brothers & Co., Publishers, Philadelphia and New York, 1897.

The claim put forward for this book in the preface and by the publisher that it "is the authority accepted as final by the courts of all English-speaking countries" would seem to be sustained by the fact that it has now reached the twelfth edition in England and an equal number in this country. The present edition has been revised by Clark Bell Esq., of the New York Bar. From a legal stand-point the work of revision seems to have been well done. Numerous cases are cited bringing this part of the work well up to date. In most respects the medical statements are correct and the bearing of modern discoveries in medicine has not been neglected. A careful reading will reveal nothing to discredit the authority of the book except in those chapters which relate to toxicology. It is greatly to be regretted that similar praise cannot be given to the toxicologic section. A just estimate of these chapters must pronounce them untrustworthy. Most statements found in them are true and accurate but the physician cannot tell which facts he can rely on unless he is an expert chemist and has other authorities which he can consult to correct the information gained from this book. This part of the work is marred by imperfections of style which obscure the sense and are not creditable to so great a work.

At the foot of p. 87 we read "Prof. Reese asserts that it is not possible from the symptoms alone to do more than merely infer the possibility of a poison because there is no poison that possesses absolutely characteristic symptoms.

The great uncertainty on this point should suggest extreme caution to 'experts' in testifying to the presence of poison from the symptoms alone, and cites the Wharton-Vanness trial at Annapolis in 1873, where medical witnesses attempted to locate tartar emetic from the symptoms, on the second trial which was shown to be absurd."

At p. 171 occurs the following statement: "The symptoms as a whole were not reconcilable with any known disease; and they only appeared after the prisoner was proved to have administered, under some pretext or other, food or medicine, the bottle which she employed for this purpose being kept locked up or in her own possession."

Quotations are freely made from Prof. Reese and these are often very abruptly introduced. The sense would be much clearer if the substance of these quotations were incorporated with the text.

There are several incorrect statements that cannot be attributed to typographical errors. On p. 132 elementary arsenic is spoken of as the metallic acid. On p. 153 we are told in regard to chronic lead poisoning "There is at first pain, with a sense of sinking common in the region of the navel (the seat of the colon)." On p. 185 it is said of certain ptomains "All the bases of this class are strongly acid." On p. 202 it is stated that "Nitroglycerine is a heavy, oily looking liquid. It dissolves in water but it is insoluble in alcohol and ether."

These inaccuracies, although striking, are by no means so serious as the incomplete and inaccurate chemical methods which are recommended. The process of dialysis is described and its application to the testing of stomach contents for free sulphuric acid is recommended. The author then continues "In thus testing for sulphuric acid it must be remembered that a sulphate, such as Epsom salts, may be present in the liquid, and that an innocent acid, like vinegar or lemon juice, may give the acid reaction. To remove any fallacy on this ground a portion of the liquid tested should be evaporated, and the residue incinerated, when the alkaline sulphate, if present, will be obtained in the solid form." This method might lead to the conclusion that sulphuric acid is absent in cases in which it is present, because in the pro-

cess of evaporation sulphuric acid will expel volatile acids and convert the other salts into sulphates. The fallacies of the gold test for nitric acid are not mentioned.

On page 111 the analysis for alkalies is thus described: "The alkali may be obtained in state of carbonate or other wise by simply evaporating the suspected liquid and incinerating the residue in a silver or porcelain vessel." This method would of course give a carbonate in the presence of any organic salt of potassium or sodium and would therefore be worthless.

Under arsenic the method of Fresenius and Von Babo and that of Gautier modified by Johnson and Chittenden are omitted. The method of Reinsch is unduly depreciated by a note of the editor who seems to misunderstand the position of Wormley on this question.

Although Prof. Wormley reported the discovery of octahedral crystals in the sublimate from antimony he clearly states the distinctions between the arsenical and antimonial sublimates and places the method of Reinsch among the best and most reliable methods of testing for arsenic in cases of poisoning.

The following directions are given for the estimation of arsenic, p. 134. "When arsenic is present in an organic liquid in large quantity, it may be precipitated as sulphide by a current of washed sulphuretted hydrogen. The liquid should be boiled, filtered, and acidulated with hydrochloric acid before passing the gas into it. When precipitation has ceased the liquid should be again filtered, the precipitate collected dried and weighed."

It may be assumed that the fallacies and imperfections of these directions would not be overlooked by experienced chemists, but if the book is written for such the directions might as well have been omitted, while the inexperienced physician who should trust to them might be led into serious error.

The important topic of the post-mortem diffusion of arsenic is entirely omitted. Vitali's test atropine is not mentioned. There is no mention of the fact that the test for stychnine fails in the presence of a large amount of brucine.

BOOK REVIEWS.

The disappearance of strychnine during putrefactive decomposition is not discussed.

A thorough revision of this part of the work, which would bring it to the grade of the remainder of the book, would greatly enhance the value of the work.

The chapter on the examination of blood is very full and is illustrated by a large number of plates showing the relative size of the red corpuscles in the blood of man and that of various animals.

The chapters on insanity have been enriched by a number of notes giving the recent decision of courts in this country and in England.

The book closes with a chapter on the subject of medico-legal surgery, a subject the importance of which is yearly increasing.

J. H. S.

CLINICAL DIAGNOSIS: THE BACTERIOLOGICAL, CHEMICAL AND MICROSCOPICAL EVIDENCE OF DISEASE. By DR. RUDOLPH v. JAKSCH, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the German University of Prague. Translated from the Fourth German Edition and Enlarged by James Cagney, A. M., M. D. Third Edition, pp. 523, London, Charles Griffin & Company, 1897.

To those familiar with the previous editions of this work the appearance of a new edition, with additions which bring it fully up to date, will be greeted with a great deal of pleasure and satisfaction. The book covers in a comprehensive manner the finer methods of diagnosis made possible by the scientific use of the test-tube, microscope, and culture methods. These are presented in an exhaustive but lucid style, and the medical practitioner, as well as the student, finds here what is of great value.

The following subjects are treated in a complete manner: the blood; buccal secretion; nasal secretion; sputum; gastric juice and vomit; fæces; urine; exudations, transudations, and cystic fluids; secretions of the genital organs; and methods of bacteriological research.

The text is well illustrated, the cuts having always a

purpose and being admirably executed are fair guides for one unfamiliar with the original objects.

The additions, making a total of sixty-three pages, are scattered throughout the book and embody the advances made since the former edition. The subject-matter is well balanced, no parts being excessively elaborated at the expense of the rest.

One of the valuable features is the bibliography, which occupies sixty pages of fine type. This is of the greatest usefulness to investigators, and is of itself one of the reasons why one could not afford to do without the book for reference.

The work of the publishers has been admirably performed, the appearance being pleasing, and the type and paper such as is required for service. G. H. W

PATHOLOGICAL TECHNIQUE. A Practical Manual for the Pathological Laboratory. By FRANK BURR MALLORY, A. M., M. D., Assistant Professor of Pathology, Harvard University Medical School; Assistant Pathologist to the Boston City Hospital; Pathologist to the Children's Hospital and to the Carney Hospital, and JAMES HOMER WRIGHT, A. M., M. D., Director of the Laboratory of the Massachusetts General Hospital; Instructor in Pathology, Harvard University Medical School. In a handsome volume of 383 pages, profusely illustrated, neatly bound in cloth \$2.50 net. W. B. Saunders, Philadelphia, 1897.

The object of this work is as designed and indicated in the title. Not alone is it of especial value to the pathologist, but to the general practitioner, being as it is, a clear, practical and systematic guide in the examination of the organs of the body. It is divided into three parts, each subject being handled concisely, but quite fully.

Part I treats of the *modus operandi* of the post-mortem, going into its detail; the first seventy pages being devoted to the macroscopical examination previous to the bacteriological and pathological. The second section, that devoted to the bacteriological study, is a thorough guide to the laboratory work, giving the methods of culture, sterilization, inoculation of the lower animals, staining, etc., together

with the differential diagnosis of the most important pathogenic bacteria pertaining to human pathology, and the characteristics of each. This part especially is well illustrated with numerous cuts and colored plates.

The latter half of the work is given up to pathological histology and examination of fæces, urine, contents of the stomach and cysts.

The authors have undoubtedly deemed it unnecessary (and wisely) to burden the pages with the many different and exhaustive methods of hardening, staining, etc., and have directed the mind of the reader to the more important means and those from which best results have been obtained in this line.

One thing of particular interest and advantage to the general practitioner, as well as to the specialist, is the examination of pathological specimens of frozen and teased preparations, inasmuch as we are then able to make an earlier diagnosis.

The reader will be struck with the thoroughly practical character of the contents, and the study of this work will be of benefit in enlarging the knowledge of the careful practitioner.

G. W. N.

LECTURES ON THE MALARIAL FEVERS. By WILLIAM SYDNEY THAYER, M. D., Associate Professor of Medicine in the Johns Hopkins University, Baltimore. New York: D. Appleton & Co.

This work of over three hundred pages, which is dedicated to Wm. Osler, consists of nine lectures dealing with the whole aspect of the subject under consideration: the history of the development of our knowledge concerning the pathogenic agent of the malarial fevers; a description of the hæmatozoa of malaria; the general conditions under which malarial fevers prevail; the clinical characters of the various forms of these fevers; the morbid anatomy; the general pathology; the diagnosis, prognosis, and treatment. Each relation of the subject is dealt with in such a manner as to leave the impression that the writer speaks with an authority born of experience and wide study of the literature of the matter in hand.

In the first lecture exception is taken to the use of the word "plasmodium" in connection with the parasite of malarial fevers, this parasite being in no biological sense a plasmodium, and the entire abandonment of the term is advocated. The germs that are believed to be the "materies" of the malarial fevers are more properly to be termed 'hæmamœbæ' and 'hæmatozoa.'

These lectures are exceedingly full and complete and from the examination standpoint are most satisfactory, but each lecture contains much more of information than any one, other than an expert, would be able to take up within the time necessary for their delivery.

There are three well executed colored plates at the end of the text which show very admirably the various phases of the development of the hæmamœba malarix, the germ of quartan fevers, the hæmamœba vivax, the germ of tertian fevers, and the hæmatozoon falciparum the germ of the æstivo-autumnal fevers.

It may safely be said that these lectures embody all that is at present known concerning the malarial fevers, and the book will prove a valuable addition to the literature of the subject and to the library of the progressive physician at all having to meet malarial diseases.

W. H. W.

SIMON'S CLINICAL DIAGNOSIS—New (2nd) Edition, Revised and Enlarged. A Manual of Clinical Diagnosis by Microscopical and Clinical Methods. For Students, Hospital Physicians and Practitioners. By CHARLES E. SIMON, M. D., Late Assistant Resident Physician Johns Hopkins Hospital, Baltimore. In one very handsome octavo volume of 530 pages, with 135 engravings and 14 full-page colored plates. Cloth, \$3.50. Philadelphia: Lea Bros. & Co.

The recommendation given this work in our review of the first edition appears to have been fully warranted, as shown by the early appearance of this, the second edition.

In the present edition an effort has been made to bring the volume thoroughly up to date. Some parts, as for instance the parasitology and bacteriology of the blood, saliva, fæces, urine and vaginal discharge have been almost

wholly rewritten. Old and complicated methods of chemical examination have been replaced by new and simple procedures. The examination of the cerebro-spinal fluid and its clinical significance have been accorded careful consideration.

The size of the volume has been increased about fifty pages. Old illustrations have given way to new and more accurate ones and some entirely new have been added.

The appearance of a second edition as early as one year after the first is extremely gratifying, not only to the author, but also to those interested in the general growth of a true scientific spirit among the medical profession at large in this country, because it is shown by the demand for a book of this kind that the recognition of the importance of clinical chemistry and microscopy is generally appreciated.

There is no occasion for any particular criticism.

The book is substantially printed and bound, the illustrations have been carefully selected and the original ones are quite satisfactory. The reviewer is of the opinion that Simon's *Diagnosis* answers the general purpose of such works fully as well as its competitors, especially those that have been translated into English from other languages as, for instance, the prototype for such manuals by von Jaksch.

L. H.

Review of Clinical Literature.

Being a List of the Leading Clinical Articles of the Past Month:

Arranged Alphabetically by Title, Giving Author and Reference

MEDICINE

Acromegaly, A Case of: Autopsy: Skeleton—O. T. Osborne, New Haven, Ct.—*Yale Med. Jour.*, Nov.

Apoplectic Attack, On Some Unusual Forms of—M. A. Starr, N. Y.—*Med. Record*, Nov. 13.

Chlorosis and Anæmia, Report of Cases Treated with Nucleo-Albumins and Bone Marrow—E. D. Klots, N. Y.—*N. Y. Med. Jour.*, Oct. 30.

Phthisis, Heredity in—J. E. Squire, London—*Am. Jour. Med. Sci.*, Nov.

Syphilis of the Central Nervous System—S. Kuh, Chicago—*Alienist and Neurol.*, Oct.

Scurvy; A Report of 42 Cases, etc.—F. A. McGrew, Crete, Neb.—*Medicine*, Nov.

Tetanus, A Report of Three Cases of, One Treated Symptomatically and Two with Tetanus Antitoxins—J. E. Owens and J. L. Porter, Chicago—*Jour. Am. Med. Ass'n.*, Nov. 13.

In considering the ætiology of gall-stones, Hunter (*Brit. Med. Jour.*, Oct. 30) refers to a number of general factors, which while only underlying this disease—so greatly enhanced in importance during the past few years—and favoring its development by promoting the stagnation of the bile, yet possess marked importance in that regard.

The immediate cause of gall-stones is catarrh of the gall-bladder in probably a very large majority of instances and such catarrhal process once incited is continued or favored by these general ætiological factors above mentioned and which are given as follows, *age* coming first in the category, it appearing that the disease shows itself with relative constancy during the decades from 30 to 60 years, but a very notable increase is found after the 60 year period is passed.

“*Sex.*—The female sex is about five times more subject

than the male, for example, 4.4 per cent. in men, 20.6 per cent. in women (Schröder).

Pregnancy.—Out of 115 women in whom gall stones were found, no fewer than 90 per cent. had borne children (Schröder).

Tight-lacing.—The same observer found gall stones in more than one-half of women whose livers showed any evidences of tight-lacing transverse furrows.

Laxity of Abdominal Walls.—By allowing the liver to fall down, so that the fundus of the gall bladder is considerably below the level of the junction of the cystic duct with the hepatic duct, this condition favors the retention of bile in the gall bladder.

Diminished Movements of Diaphragm.—The expulsion of bile is at all times greatly influenced by movements of the diaphragm, and any restriction in the range of its movements correspondingly favors its retention. This is probably the way in which pregnancy operates in favoring the production of gall stones; as also tight-lacing, and sedentary habits.

Sedentary Habits.—It is this factor which probably induces the liability to gall stones seen with advancing age, also seen in inmates of lunatic asylums.

Heredity is regarded as a factor by some; on insufficient evidence, however, I consider. Out of 165 cases, Bouchard found a parental history of gall stone in 36.

Gout is also regarded as favoring cholelithiasis. In 95 out of 166 cases Senac found a history of hereditary or acquired gout (1895). On the other hand Bouchard only found it in 13 out of 165 cases.

Influence of Food.—Habits of life as regards character of food and water have been regarded as factors in producing gall stones; also as serving to explain the greater frequency of cholelithiasis in different countries and in different parts of the same country. On this point no definite data are, I consider, forthcoming. We are dealing with impressions rather than with facts. As a matter of fact cholelithiasis occurs in every rank and class of society; in the poor and sparsely nourished as much as in the obese and over-fed.

Insanity.—Inmates of asylums are prone to gall stones:

doubtless in consequence of the sluggish apathetic habits so characteristic of many forms of insanity.

Heart Disease seems to favor occurrence of gall stones. Out of 49 cases, no fewer than 27 were found to suffer from cardiac lesions (Brockbank).

Chronic Rheumatism.—29 out of 165 cases.

Diabetes.—16 out of 165 cases observed by Bouchard.

Renal Lithiasis.—A relation has been said to exist between the occurrence of gall stones and renal calculi. Thus Kraus found the two associated in 42 cases. On the other hand the statistics of others lend no support to this view. Thus Naunyn has only observed the association once."

* *

SURGERY.

Angioma of the Liver. Removal of an, by Elastic Constriction External to the Abdominal Cavity: with a Table of 59 Cases of Operation for Hepatic Tumors—W. W. Keen, Phila.—*Penn. Med. Jour.*, Oct.

Congenital Ano-rectal Imperforation, The Surgical Treatment of in the Light of Modern Operative Procedures—R. Matas, New Orleans—*Am. Jour. Obs.*, Nov.

Femoral Hernia, The Radical Cure of—G. R. Fowler, Brooklyn—*Brook. Med. Jour.*, Nov.

Gall Bladder and Bile Ducts, Personal Observations on the Surgery of the—A. H. Ferguson, Chicago—*Brit. Med. Jour.*, Nov. 6.

Hip, Congenital Dislocation of the—E. H. Bradford, Boston—*Am. Jour. Med. Sci.*, Nov.

OBSTETRICS.

Abdominal Surgery in Hospital Practice—H. W. Longyear, Detroit, Mich.—*Phys. and Surg.*, Oct.

Ectopic Gestation, Report of 4 Cases of, with History, Treatment and Remarks—E. D. Coonley, Pt. Richmond, S. I.—*Yale Med. Jour.*, Nov.

Pelvic Abscess—P. F. Munde, N. Y.—*Am. Jour. Obs.*, Nov.

Uterine Prolapse, Treatment of, with Illustrative Cases—W. Krusen, Phila.—*Am. Gyn. & Obs. Jour.*, Nov.

In connection with the discussion of the subject of excessive and uncontrollable vomiting of pregnancy in the Section on Obstetrics and Gynæcology at the late meeting of the *British Medical Association*, Dr. J. A. Temple, of Toronto, remarked (*Brit. Med. Jour.*, Oct. 23):

"The ordinary morning sickness which generally accompanies pregnancy may be looked upon, I think, as phy-

siological, and not dependent on any special pathological condition, purely sympathetic, but in the pernicious form it is invariably, I believe, accompanied by some pathological condition; and if the cause is carefully sought for an explanation of the fatal result, if it so terminates, will be found. As to its frequency, there is a great difference amongst authorities. Robert Barnes reports 9 fatal cases. Gueniot out of 110 cases reports 46 deaths; Howitz 13 cases and 5 deaths; Joulin reports 121 cases and 49 deaths; McClintock reports 50 fatal cases; Doe 48 cases and 18 deaths. While Carl Braun, with his enormous experience of 150,000 obstetrical cases, has never known a single fatal case from hyperemesis. Kaltenbach, in discussing the treatment, has gone so far as to deny the propriety of artificial abortion. This discrepancy of opinions as to the fatality of this complaint, as reported by German and other writers, is explained by Faggard, who says: 'It is not at all improbable that the difference of opinion depends in a large measure upon the difference in diagnostic criteria insisted upon by the respective schools.'

In the majority of fatal cases reported by writers other than the Germans, there is a notable absence of reliable records of *post-mortem* examinations. In the few cases collected by the Germans the diagnosis during life has almost invariably been confirmed or negatived by a *post mortem* examination. Horrocks writing on this point, makes a very excellent statement. He says: 'Where there has been no *post-mortem*, I do not think one is entitled to say that pregnancy caused the fatal vomiting. It may have been the cause, and the only cause, or it may have been an aggravation of some other cause, or it may have had nothing to do with it.' "

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NO. 4.

SURGICAL CLINIC; VAGINAL HYSTERECTOMY— IMPROVED METHOD.—By J. B. Murphy, M. D., *Professor of Surgery, Medical School, University of Illinois, Chicago.*

GENTLEMEN.—The patient I here present to you gives the following *history*: Mrs. M. A., aged 62, married, housewife; was admitted to the West Side Hospital Oct. 11, 1897, and made the following statement: Mother died in child-birth; father of typhoid; one sister and brother died of yellow fever. Previous diseases:—Had bronchitis when 2 years of age; suffered from malaria two years ago. Began to menstruate at 15 years; was regular with the exception of the periods of pregnancy up to the menopause, which took place when she was 45 years old. Patient has had ten children and no miscarriages. Never suffered from leucorrhœa up to the present trouble. Present illness:—Two years ago the patient noticed she had a whitish discharge from the vagina, which has been growing worse and during the last month it has been stained with blood. It did not have a disagreeable odor. In the last four months she has had pain of a gnawing character in the region of the uterus. Four weeks ago she had quite a severe hæmorrhage, which caused her to consult a doctor for the first time. She has emaciated somewhat, having lost about ten pounds; has anorexia and believes that she is more feeble than previously. The patient has had no other symptoms.

Examination:—The patient is somewhat cachectic, muscles are flabby, skin inelastic, heart, lungs and abdomen normal. Urine, acid; specific gravity 1020; otherwise negative. Inguinal glands not enlarged. External genitals and vagina normal. Cervix directed backwards, slightly enlarged, not eroded. Bimanual palpation:—Uterus about as large as a medium-sized pear. Its surface is smooth and it is freely movable. The cervix can be compressed and flattened. Vaginal inspection:—Deep cervical erosion; sound shows an excavation in the cervix on the anterior side. The internal os is large. Pressure upon the fundus causes a discharge of one-half dram of blood, pus and debris. The odor from the discharge is not offensive.

Diagnosis:—Carcinoma beginning within the cervix and extending to the fundus. Vaginal hysterectomy advised.

Remarks:—The striking features in this case are:

First, the emaciation, cachexia and lassitude of the patient without any apparent cause, not having suffered from pain, digestive disturbance nor any physical condition to which she can attribute these changes.

Second, she ceased menstruating at the age of 45, and after a menopause of seventeen years duration with but very slight leucorrhœa, not offensive, she was suddenly attacked with a vaginal hæmorrhage which was followed by oozing. She has had no other symptoms. The discharge at present is not offensive. She had not been examined by a physician until thirty days ago, nor had she used vaginal douches or applications, which accounts for absence of odor in the discharge. The common, excessively offensive discharge from carcinomatous uteri is a manifestation not of the cancer *per se*, but an evidence that a putrefactive process has been set up in the sulci of the carcinoma, by infection from without. A case of carcinoma uteri may go through its entire course without the slightest disagreeable odor unless the patient through herself, nurse or physician becomes infected, not with a pus infection but the microphytes of putrefaction.

Third, pressure on the fundus causing discharge of purulent or sanguino-purulent material from the uterus, is a very significant symptom of carcinoma of the fundus.

The history, the clinical course and the physical exam-

ination, even without the aid of a microscopic section of the growth, are practically pathognomonic of malignant disease of the uterus, i. e., carcinoma, as sarcoma is very rare.

The pathologic conditions which occur in the cervix of the uterus, and particularly in patients of this age, are adenomata, sessile and pedunculated, which are often associated with laceration, and carcinomata. Some authors subdivide the latter, from their appearance rather than from their pathological or clinical significance, into dermoid, (scirrhus,) adenoid and medullary carcinomata. These should be considered different stages of the same disease rather than different classes, as those first mentioned in their later stages may be classified as medullary. We also have adenoma and carcinoma affecting the body of the uterus, the former occurring at a much earlier period of life than the latter. Carcinoma of the fundus is very rare as compared with carcinoma of the cervix. The latter often advances to the body of the uterus, while carcinoma of the fundus rarely descends into the cervix.

Histologically the adenomata consist of an axis of fibrous or muscular tissue covered with epithelial cells similar to those on the surface from which they originated, except where the adenoma protrudes from the cervix into the vagina and is subjected to the friction and discharge therefrom, then its epithelium becomes stratified.

The carcinomata are a mimicry of the glands of the canal or uterus, from which they originate, and may be designated as pavement epithelioma, cylindrical epithelioma, polymorphous epithelioma, carcinoma. In the cervix the carcinoma usually begins low down, close to the transition zone from squamous to columnar epithelium.

Etiology:—The etiology of carcinoma of the cervix is still obscure, the same as etiology of carcinoma in general. A consideration of the various theories advanced had better be omitted from the clinical amphitheater, as they tend to confuse rather than enlighten the student. The Cohnheim theory has the precedence at present.

Symptoms:—In the analysis and study of the diseases of organs hidden from view it is advantageous to picture them in the mind's eye as exposed; we can in this way more

readily appreciate the pathologic changes and the symptoms and signs that would be likely to occur from them. Let us take, for instance, beginning carcinoma of the glandular tissue of the cervix; at first it appears as a hyperplasia, an induration, a papule, an elevation of the mucosa. It can be readily understood that in such condition and stage it would give no symptoms of which the patient and physician could become cognizant, and unfortunately the same is true until the disease has reached a rather advanced period, when it produces its malign effect upon the general metabolism of the patient, which we recognize as cachexia. When this disease has advanced to an ulcer of considerable size it is covered by a friable, villous, granulation surface; and the tendency of these elevations is to become necrotic. This necrosis attacks the vascular wall, and the patient has probably the first manifestation of the disease in a hæmorrhage, or, if less severe, a spotting of blood. If the disease occurs in the period of sexual activity the hæmorrhage is regarded as a more prolonged and profuse menstruation, or considered traumatic after coitus, or a hæmorrhage in the inter-menstrual time. An offensive, profuse leucorrhœa, always due to saprophytes introduced from without, when occurring after the age of 35 should always arouse the suspicion of carcinoma. Pain is rarely present until after the disease has exceeded the confines of the uterus. The vesical, rectal, peritoneal, thrombo-phlebitic and compression symptoms are all manifestations of an advanced stage, as are the vesico-vaginal and vesico-rectal fistulæ. Secondary carcinoma may occur in distant organs, as the lungs, liver, spleen, kidneys, etc., or a somewhat earlier stage in the vaginal glands. All of these are confirmatory rather than diagnostic symptoms. It is possible for pregnancy to take place during this disease, and great care should be taken to recognize the symptoms of carcinoma in contradistinction to the symptoms of pregnancy. Abortion frequently takes place about the third month.

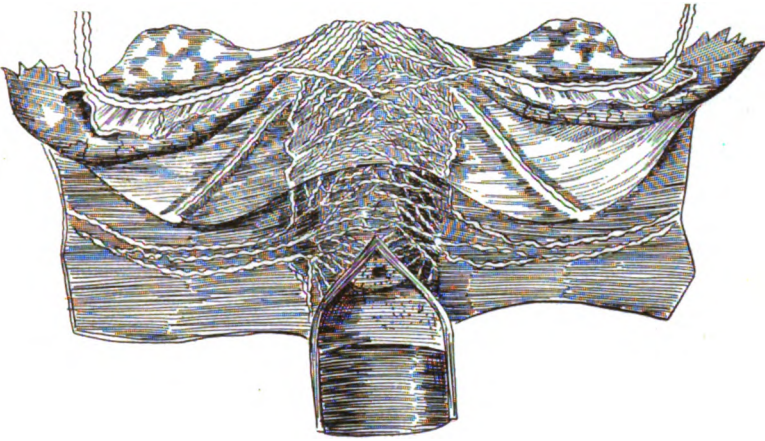
Differential diagnosis:—In the early stage it is impossible to make a differential diagnosis between an elevated, indurated erosion of catarrh and ulcerations of the cervix and a carcinoma without the aid of microscope, and, I regret to

say, even too frequently with the assistance of this instrument. It may be differentiated from myoma first in the symptoms: the hæmorrhage from a myoma is a prolonged and profuse menstruation; the menopause does not take place at the usual period but is extended even to the age of 50 or 55 years and has no intermission before that time. With carcinoma we have an interval of months and even years in which there is no flow, followed by a period of hæmorrhage. Again the size and conformation of the uterus differ materially in myoma and carcinoma. The smooth surface of the submucous fibroid, of polypus, is easily distinguished from the ulcerated surface of a carcinoma. The uterus in carcinoma is rarely much enlarged, even when the fundus is affected; but it is symmetrically enlarged, rather like a sub-involuted uterus; while in myomata the enlargement is marked and irregular in outline. In the encapsulated variety, either of the cervix or fundus, there is more marked enlargement. The microscope aids in the differential diagnosis between myxo-sarcoma, myeloma and fibro-adenoma. A necrotic polypus or uterine fibroid may give a very offensive odor, but even that is different from a carcinoma. Carcinoma of the cervix should be diagnosticated early, if the patient be under the observation of the physician. Every papule, induration and hæmorrhage area of the surface or within the cervical canal should be treated with grave suspicion and *dissected*, not curretted, out for microscopic examination. This operation is practically painless.

Treatment:—The treatment of carcinoma uteri may be divided into two classes, radical and palliative. I mention radical first, as that is the ideal and only curative treatment and in order that it may be accomplished the surgeon must ever be on the alert. The cases which are amenable to radical treatment are those in which the carcinoma is still confined within the limitations of the uterus, or at most where there is only a glandular, secondary involvement. When the diagnosis of carcinoma of the cervix is made and confirmed by a microscopic examination it is not sufficient to amputate the cervix—the entire uterus must be removed, that is, a hysterectomy must be performed. The carcinoma returns in such an enormous percentage of cases after cervical am-

putation that it no longer occupies a place as a legitimate operation for this disease.

Should hysterectomy for carcinoma be vaginal or abdominal? The mortality following vaginal hysterectomy in expert hands is materially less than that of abdominal hysterectomy, and in the hands of the "occasional operator" or "family doctor" greatly less. And here, gentlemen, I wish to emphasize the importance of technical training in operative work if you intend to practice surgery. The tinsmith, the shoemaker, the carpenter, have to devote many months and years of their time to the mechanical part of their art to train their hands to execute rapidly, systematically and concisely the various parts of their trade, while the pseudo-surgeon is so adept, so nimble-fingered, so superior that he can undertake the most complicated operation not only without having performed it on the cadaver or the lower animal, but without even having seen or carefully read a description of the operation! I have seen this particular operation of vaginal hysterectomy performed with so much tearing, so much drawing, so much sweating, that it looked more as if it were being chewed out by a canine than being removed by the artistic hand of an educated surgeon. Yes, I have seen four hours and fifteen minutes consumed in performing a simple hysterectomy for uncomplicated carcinoma of the cervix—an operation that should be performed by skilled hands in from ten to twenty minutes. I have seen it done in seven minutes. It is time that the voice of the profession was raised against this class of operators, and I say this to you as students that you may save yourselves the humiliation and your patients the dangers of these prolonged and indifferent, if not criminal, proceedings. Every operation should be completed with the utmost haste consistent with thorough work. These results cannot be accomplished by inflating yourselves with the idea that you are adepts. It can only be accomplished by repeatedly and carefully operating on the lower animals and the cadaver, and spending weeks and months at the elbow of the leading surgical operators of the day. Make it a matter of conscience; perfect yourselves in the technique of operation as you would that others should be trained to operate on you.



Lymphatics of broad ligament.
(of lumbar plexus.)

Ovary. Fallopian tube.

Ovarian artery.

Funicular lymphatics
to inguinal glands)

Funicular artery.

Uterine and vaginal lymphatics
(to pelvic glands)

Uterine artery.

Vaginal arteries.

Vulvar lymphatics
(to inguinal glands)

Transverse perineal artery.

Diagram of the arteries and Lymphatics of the female generative organs

Aster Morris.

As the patient is now anæsthetized we will proceed with the operation. You observe the patient is in the lithotomy position. The external genitals and vagina have been disinfected. I place a broad, Sims' speculum in the anterior and posterior commissure. With the Paquelin cautery I now divide the mucosa and submucosa over the entire circumference of the cervix at the fornix vaginæ, as shown in Fig. 1,

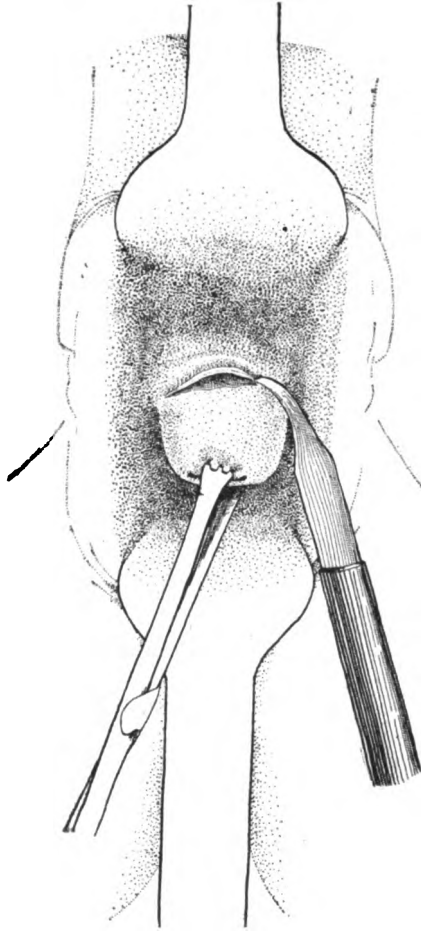


Fig. 1

kindly made for me by Mr. Andrews of this class. I use the Paquelin, as it prevents the hæmorrhage from the mucosa, which is very annoying and in one recorded case

proved fatal. The mucosa is retracted, and with a curved scissors, the point toward the body of the uterus, an opening is made into the vesico-uterine fold of the peritoneum. The scissors being then spread enlarge the opening sufficient to admit the broad speculum into the peritoneal cavity.

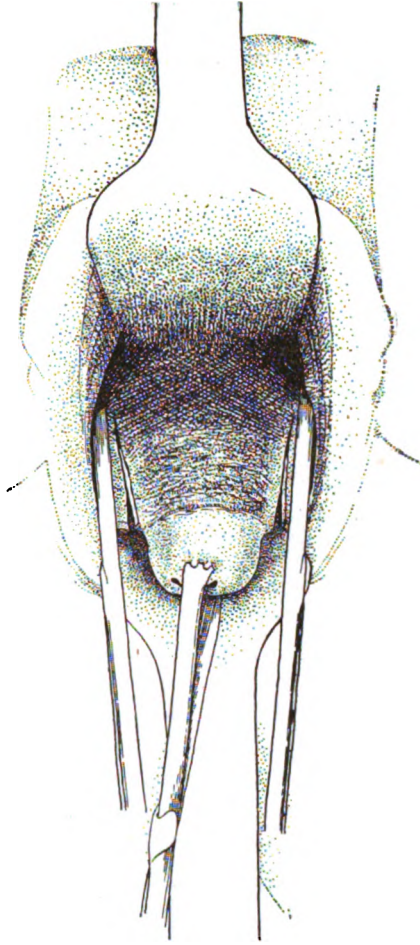


Fig. 2

With the same instrument and in the same manner the Douglas pouch is opened and the under speculum inserted into the opening. We have then the uterus suspended by the broad ligaments and resting between the two specula.

The uterine arteries can now be distinctly felt on both sides of the cervix. I now insert a French clamp with longitudinal grooves on the right broad ligament, one blade in the anterior opening and one blade in the posterior hugging close to the uterus and extending up the side of the uterus

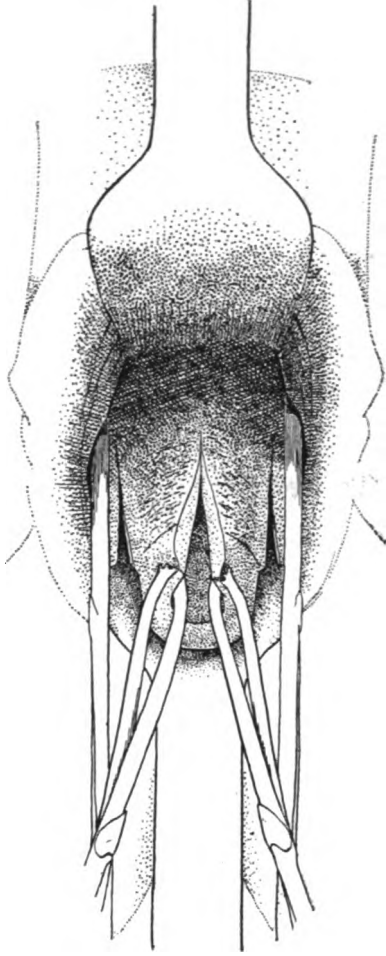
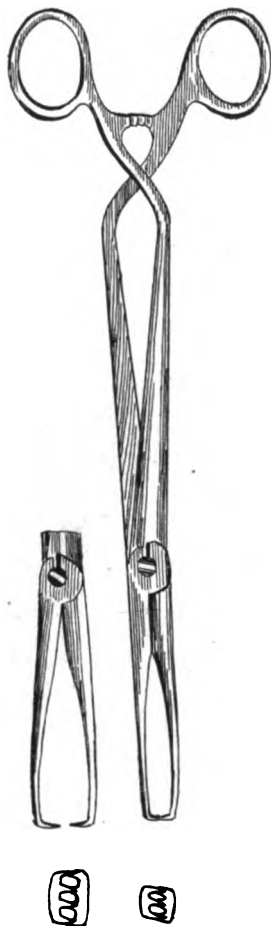


Fig. 3

one and one-half inches. I lock the forceps and divide the broad ligament from the uterus with the scissors to within one-fourth inch of the tip of the forceps. The left broad ligament is treated in like manner. As shown in Fig. 2.

I have now secured both uterine arteries and the uterus itself may be cut without the slightest hæmorrhage.



I now remove the original muzeux and place one on either side of the anterior lip of the uterus, and with a scissors divide the anterior wall of the uterus, as shown in Fig. III. This division is continued clear to the fundus, changing the position of the muzeux as the incision advances, drawing down the fundus as it is being divided, shown in Fig. IV. It readily rolls out of the anterior portion of the vagina and brings with it the tube and ovary, which now appear on either side of anterior retractor. The division of

the uterus is continued through the fundus and for one-half inch down the posterior wall. The right ovary and tube are now drawn out and a clamp similar to the one previously used includes the remaining portion of the broad ligament

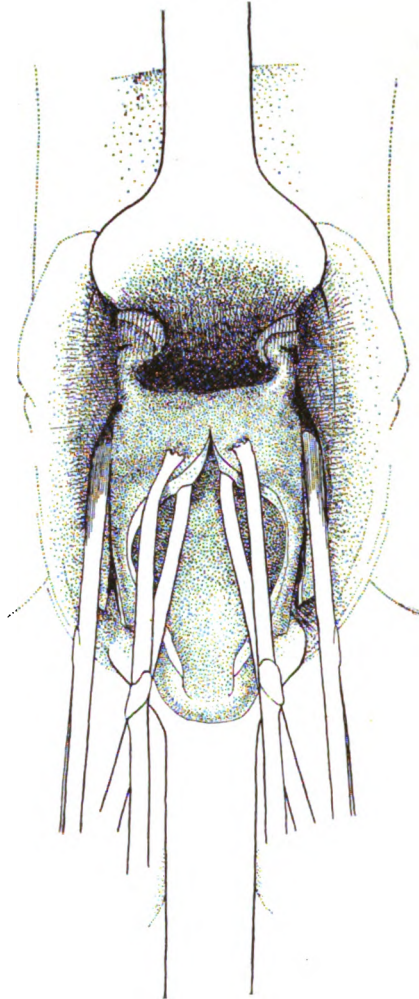


Fig. 4

on the outside of the ovary and tube. This forceps extends down and overlaps for one-fourth inch the tissue in the first forceps, as shown in Fig. V. The remaining portion of the

broad ligament is now divided and you will see that the right half of the uterus is free. I will clamp the remaining portion of the left broad ligament by inserting the forceps in the same manner as I did the forceps on the right ligament,

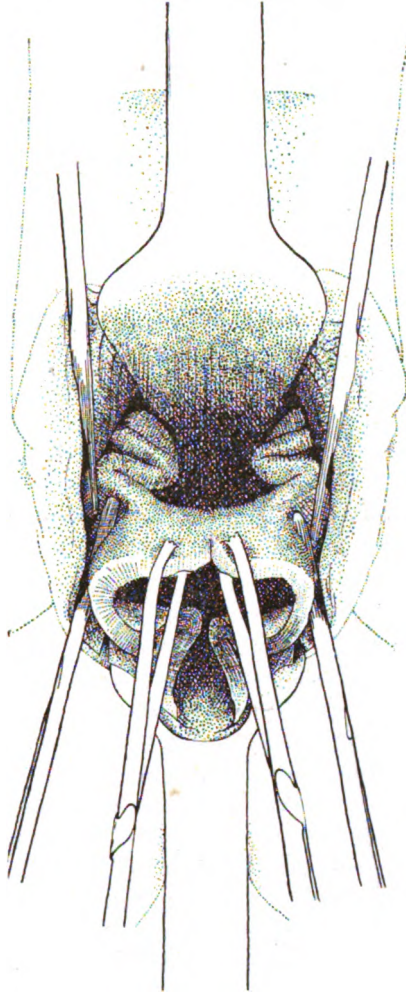


Fig. 5

I lock the forceps and cut off uterus, tube and ovary. You now see that the ovarian arteries are secured by the upper clamp, while the uterine artery is secured by the lower, and for the first time in the operation the intestines are now in

view. The ligaments retract, and you will notice that the forceps all fall into abunch. The opening in the vault of the vagina is now firmly packed with iodoform gauze to retain the intestines, and as there is no bleeding the specula are removed. Care must be taken not to allow the end of the intestine to protrude between the ends of the forceps or around the packing. The operation is completed by protecting the vulva with an antiseptic dressing.

By this method the uterus and appendages can be removed in the average case of carcinoma and small myoma in about the same length of time it takes to describe it. The prognosis in this case, notwithstanding the patient's age, 62 years, is that she will recover without any unpleasant symptoms, as is the usual course in these cases. She is to be placed in bed and catheterized every few hours. Strychnia will be administered hypodermatically, and if the patient suffers severe pain one-third-grain doses of codeine will be given. The clamps will be removed in forty-eight hours; at that time there will be practically no danger from hæmorrhage. The packing is allowed to remain for from ten to fifteen days. After it is removed daily irrigations of sterilized water, one per cent. ichthyol, or 1-4000 bichloride, will be made.

The above technique is occasionally varied in the following particulars: After the anterior and posterior folds have been opened and before the first lateral clamp is applied, the uterus is divided clear to the fundus (Doyen) and the latter turned out, when a single Doyen clamp is placed on the broad ligament, including its entire length from the fornix to the apex. The uterus is then separated from its attachments with the scissors. The other broad ligament is treated in like manner. While by this method only one clamp is applied I feel there is greater danger of including the ureter and also greater danger of a retraction of the broad ligament from the grasp of the clamp. These, as far as I am aware, are only theoretical objections. The clamp may be inserted outside or inside of the ovary and tube as desired. Some operators prefer to use ligatures in place of the clamp for securing the broad ligament (Martin, Eastman.) These are applied in regular succession as the broad

ligament is divided, otherwise the technique is the same as with the clamp.

I prefer the vaginal to the abdominal route for the extirpation of the uterus for malignant disease, though recently the abdominal route has been urged in preference because it permits of the removal of retro-peritoneal carcinomatous glands. This is only a theoretical advantage and is more than counter-balanced by the increased mortality of the abdominal route. As to the ultimate result of the disease Olshausen shows that 25.6 per cent. of the cases were free from return five years after the operation. The danger of return is much greater after a carcinoma of the cervix than of the fundus, particularly of the cylinder-celled variety.

The palliative treatment of carcinoma uteri in inoperable cases is, for the hæmorrhage, the profuse discharge and the pressure symptoms, excision of the protuberances with the Paquelin cautery or incineration of the entire surface. This gives the patient temporary relief at least from the hæmorrhage and discharge. Much relief is also obtained by the application of a 50 per cent. solution of chloride of zinc. In the use of this care should be exercised lest the sloughing be too extensive and involve the bladder and rectum. The odor can be successfully controlled by irrigations with a saturated solution of bicarbonate of sodium or packing the vagina with gauze saturated with the same solution.

NOTE.—Two weeks after the operation the packing was removed, the patient was convalescent without any unpleasant symptoms. She returned to her home on the seventeenth day.

CLINICAL LECTURES ON DISEASES OF THE
HEART, LUNGS AND PLEURA.—By Joseph M.
Patton, M. D., *Professor of Internal Medicine,*
Chicago Polyclinic.

CHRONIC ENDOCARDITIS.

The majority of cases of cardiac disease which we are called upon to treat are the results, directly or indirectly, of chronic endocarditis.

The endocardial inflammation may not have been recognized until its sequences which we are called upon to treat disclose its existence. Through the influence of habit and of occupation, chronic endocarditis is more frequent in men than in women. It occurs at all periods of life and under all social conditions. Its insidious advent is responsible for delayed diagnoses. It is rather remarkable what extensive changes may occur in the heart as the result of chronic endocarditis unaccompanied by any history or subjective symptoms until the period of hyposystole or dynamical failure is reached.

ÆTIOLOGY.—The great majority of cases of chronic endocarditis are due to rheumatism and are the sequelæ of attacks of acute or subacute rheumatic endocarditis. Again, endocarditis may be a chronic process from the beginning, at least no acute period can be recognized. This form of the disease (contracting or sclerotic) is most likely to occur at the aortic orifice and be associated with the atheromatous or arterio-sclerotic degenerations of the aorta and systemic vessels incident to advancing age or connected with a gouty diathesis or with nephritic changes. (Jackson reports 100 autopsies in which sixty of the cases were due to arterio-sclerosis, and over one-half of these were above fifty years of age.) When this insidious form of endocarditis is of rheumatic origin it usually affects the mitral valves, especially when occurring in children. In adults, however, and even in children in rare instances, it may affect the aortic valves.

Chronic endocarditis may result from Bright's disease, or any of the infectious diseases in which marked toxicity of the blood is present. In most of these cases it is probable that there is a more or less acute stage at the inception of the endocardial inflammation which being accompanied by no subjective signs is not recognized. Chronic endocarditis as a sequel of acute rheumatic endocarditis usually affects the mitral valves in children and the aortic valves in adults.

Chorea, with or without rheumatic associations is frequently followed or accompanied by chronic endocarditis. The latter when associated with chorea in early life is more likely to affect the aortic valves than is a purely rheumatic endocarditis occurring at the same period.

Rupture of the attachment of a segment of a healthy valve or of the chordæ tendineæ may result in the development of the same chain of mechanical sequences as follow endocarditis of rheumatic origin.

The increased force with which the cardiac valves close under the high blood pressure incident to very laborious occupations, may result in sclerotic or atheromatous changes about the aortic valves (Fothergill, Rosenstein).

According to Peacock mitral disease may result from severe exertion. The effect of long continued and frequent strain in producing functional disturbance of the heart, also muscular changes and dynamical failure, has been shown by Da Costa, Taylor and others.

Regurgitation at the orifices of the heart may result from enlargement of the valvular rings independently of valvular disease; dilatation of the aorta may in this way cause aortic regurgitation, and dilatation of the ventricles may in like manner cause mitral or tricuspid regurgitation. These conditions may be temporary or permanent.

MORBID ANATOMY.—In chronic endocarditis cell infiltration is much less rapid and abundant than in the acute form. There is a marked tendency toward the development of a fibrillated structure, with less softening and disintegration of the intercellular substance.

The result of this process is a fibroid thickening of the endocardium with induration and contraction of the valves, with adhesion of their cusps from the basis towards the

apices, causing narrowing of the orifice. Papillary growths and vegetations may form on the valves and may undergo calcareous or partial fatty degeneration. These growths are situated upon the ventricular surface of the aortic valves and upon the auricular surface of the mitral or tricuspid valves. The chordæ tendineæ may be thickened and shortened, and every conceivable form of distortion of the valves and orifices may result from these processes. The valves may become adherent to the cardiac wall causing extensive regurgitation, or the onward current may be alone affected from the extensive growths on the valves.

The valves may become so adherent that there is simply a central slit in a diaphragm which stretches across the opening. Retractions and adhesions may cause the mitral valves to assume the shape of a perforated cone admitting but the tip of the little finger, when the tips of three fingers should normally be admitted. The aortic opening may be so altered as to only admit a small pencil, or from the adhesion of long vegetations to the aortic wall, sudden and extensive regurgitation may occur. Atheromatous masses and calcareous nodules may form, particularly about the aortic opening. Valvular aneurism, softening, ulceration and distruction of the valves may occur.

Interstitial endocarditis affecting the endocardium of the heart cavities, may cause insufficiency of the valves from shortening of the calumnæ carnæ and the chordæ tendineæ. The heart wall may become indurated and thinned, resulting in aneurism of the cardiac wall, which usually occurs at the apex of the left ventricle. Aneurisms at the base and in the interventricular septum may be connected with valvular aneurisms. Communication may be established between the ventricles.

Various degrees of myocarditis may be associated with interstitial endocarditis of the ventricular endocardium. Degeneration of the heart muscle develops both as the result of myocarditis and from the changes induced by the altered state of the coronary circulation, and acts through the latter cause as the direct means of producing rupture of compensation. In the latter case, perivascular sclerosis beginning around the branches of the coronary arteries in the case of

aortic endocarditis, and around the venous branches of the coronary circulation in the case of mitral endocarditis, interferes with nutrition and results in degeneration and dynamical failure of the muscle.

Foetal endocarditis almost always occurs on the right side of the heart. It may be primary, but is usually secondary to congenital malformations of the heart. The latter, while of great interest, are apart from our present subject.

CLINICAL HISTORY.—The clinical history of chronic endocarditis up to the time when an ataxic condition of the heart is reached, is indefinite. The general effect of all valvular lesions whether causing stenosis or insufficiency, is to cause stagnation of the blood current behind the lesion and a corresponding deficiency beyond the seat of the lesion. The result is increase in pressure in the venous system and lowering of pressure in the arterial system.

In order to overcome this condition of the circulation more pumping force must be furnished through the development of hypertrophy of the heart muscle, until *compensation* is established. The length of time that compensation will last depends on the constitution and habits of the individual, and will vary from a few months to a life time. During this period we may have no symptoms and we are often surprised to find valvular lesions which have evidently existed for years entirely unknown to the patient.

When compensation is not maintained, the circulatory disturbance in the various organs and tissues produce symptoms which are part of the clinical history of chronic endocarditis. Thrombosis in the heart cavities may occur from slowing of the circulation, and embolic infarction may occur in the pulmonary tract when the thrombus is in the right heart; or in the tract of the general arterial system, if thrombosis occurs in the left heart. Detached particles from a papillary endocarditis may cause like infarctions.

Sudden dyspnoea, cough, bloody expectoration with perhaps a chill (Rosenstein), may attend infarction of the lungs. Hemiplegia from cerebral embolism may occur in aortic endocarditis. Infarction of the spleen or kidneys may cause severe pain in the region of these organs, but more often causes no symptoms. Hæmaturia with transient albuminu-

ria may occur. Gangrene of one extremity or numbness with œdematous swelling may take place from obstructed circulation. Purpuric eruptions may occur from capillary embolism of the skin.

Dyspnœa is perhaps the most prominent feature of the earlier clinical history of chronic endocarditis. Appearing at first only on exertion, and varying much in degree it becomes gradually more severe and frequent. Congestion of the base of the lungs, particularly on the left side, from lack of power of the right ventricle, marks the approach of failure compensation in mitral lesions and the asystolic period of aortic lesions. The weakening of the right ventricle is first shown by dry cough with sibilant or sonorous rales, followed by fine, œdematous rales, with free expectoration. The expectoration may be bloody and quite free.

Orthopnœa now appears and may be quite troublesome. It may, indeed, appear early and before dyspnœa becomes particularly evident.

Pulmonary infarctions and apoplexy occur, in connection with which necrotic changes are more frequent than in benign embolic infarctions.

If the congestion is continued the pulmonary capillaries project into and encroach upon the alveolar spaces, the aerating surface is diminished and a more or less constant dyspnœa is established (cardiac asthma). The continued congestion of the pulmonary circulation causes increase of connective tissue, capillary hæmorrhage and pigment deposit (brown induration). Œdema of the lungs and bilateral hydrothorax may occur. All of these conditions contribute to the extent and permanency of the dyspnœa.

Dyspnœa will also occur from increased tension in the systemic arteries from contraction of the arterioles, in which case it is spasmodic and resembles a true asthmatic paroxysm. The patient, however, is unable to move about as every movement increases his distress.

Cyanosis may be present to a varying extent. The more marked degrees of cyanosis are likely to appear in aortic endocarditis when relative mitral regurgitation marks the development of the hypsystolic period.

Marked discomfort, with a sense of fullness in the epi-

gastrium, may result from congestive enlargement of the liver, which may become large enough to fill two-thirds of the abdominal cavity. "Nutmeg" liver may result from long continued congestion. Jaundice may result from swelling and catarrh of the common bile duct. Congestion of the digestive tract produces marked disturbance of digestion, flatulence and alternating diarrhoea and constipation. Hæmorrhage may occur from piles, or hæmatemesis may occur. Menorrhagia or metrorrhagia may be present or there may be amenorrhoea if the quantity of blood is small. Epistaxis sometimes occurs and may be severe.

Scanty, high-colored urine of high specific gravity is a more or less constant feature of the history of these cases. The amount of solids in the urine will be near the normal if actual kidney disease is not present. Lithates will be deposited freely. A moderate amount of albumen will usually be found, its presence and quantity depending on the amount of congestion of the kidney. If the latter condition be marked, casts may be found in the urine, with possibly a few blood cells. Granular kidney may develop if the congestion of the kidney is sufficiently prolonged. In chronic endocarditis there is, in the absence of kidney lesion, a distinct relation between the integrity of circulation and the amount, specific gravity and color of the urine.

Œdema is another important feature of the history of all cardiopathies, and is one of great interest to the patient. It appears first toward night about the ankles and dorsum of the foot if the foot covering be loose. The tissues are at first puffy and then become doughy, pitting on firm pressure. The œdema gradually becomes more extensive and may involve the whole body, but is usually confined to the most dependent portions. It varies greatly in amount and constancy, depending on the condition of the circulation and the habits of the patient. Cardiac œdema has a soft, doughy feel and the skin unless hyperæmic is never as shiny as in nephritic œdema. In the latter, the tissue has a hard, indurated feel and the swelling may appear about the loins before it develops in the feet.

As to the cause of œdema, it is fair to presume that it depends on increased exudation from the vessels and di-

minished absorption by the lymph channels, and that the extent of the oedema depends on the permeability of the vessel wall and the intra-capillary blood pressure (Starling). The nervous system probably has nothing to do with the production of oedema except in so far as it may influence capillary blood pressure.

Cardiac palpitation may be present in endocarditis, but is due to disturbed innervation or to pressure on the diaphragm from gastro-intestinal disturbance, rather than to the cardiac lesion. Palpitation is more indicative of functional than organic heart disease. Arrhythmia of the heart, if present, is generally due to reflex influence. It may be a feature of mitral stenosis. In advanced cardiac disease arrhythmia may be directly indicative of asystolism.

Pain is inconstant, and is an attribute of no valvular lesion, with the possible exception of some aortic lesions when they are associated with disease of the aorta and coronary vessels and the heart walls. According to Peter, pain in aortic disease is due to irritation of the basic cardiac plexus from dilatation of the first portion of the aorta.

Cheyne-Stokes respiration which occasionally presents itself in cardiac disease, belongs to the nervous phenomena and is usually a symptom of toxæmia, and indicative of the uræmic state. It appears late in the disease and is usually present in cases of endocarditis associated with nephritis. While of a serious prognostic import, Cheynes-Stokes respiration is not necessarily an evidence of fatality.

Fainting spells may be associated with the low arterial tension of aortic stenosis. Cerebral embolism and apoplexy occur with aortic lesions, and may be the cause of sudden death, though in my experience this is not frequent.

Before discussing the special valvular symptoms of chronic endocarditis, we may briefly consider *the relation of endocardial murmurs to chronic endocarditis*.

First as to the cause of a murmur. The "tension" theory, "friction" theory, or Corrigan's theory of the development of blood currents, are all insufficient. A more reliable theory is that adopted by Davidson, Geigel and others, that a murmur results from the lateral vibration of the valve

or the heart walls from the force of the impingement of the blood stream.

In differentiating endocardial from extracardial murmurs, we must remember that the latter are seldom or never basic in situation, not necessarily synchronous with the cardiac sounds, usually obtain in the pre-ventricular or parasternal region (Potain), have no fixed point of maximum intensity, no constant area of diffusion, are of median pitch and quality and are very changeable as to location, rhythm, pitch and constancy. Extracardiac murmurs of cardio-pulmonary origin are not necessarily suspended with interruption of respiration, as Laennec, their discoverer, supposed.

In distinguishing between organic and anorganic endocardial murmurs, we find that anorganic murmurs are almost always systolic, are heard best along the left parasternal line and toward the base of the heart, are not conveyed outside of the cardiac area, are softer (anæmic murmurs) in quality than organic murmurs and are likely to be more increased in intensity by assuming the recumbent position, than organic murmurs.

We must remember, however, that it is possible to have diastolic murmurs at either the aortic, mitral or tricuspid openings from stretching of the rings without organic lesion of the respective valves. In these cases we must depend on the secondary changes which have taken place in the heart to guide us.

A few cases have been reported of functional pre-systolic murmurs identical with the murmur of organic mitral stenosis.

Organic endocardial murmurs have a definite relation to the rhythm of the heart sounds, a more or less constant point of maximum intensity and direction of transmission, and have characteristic elements of pitch, quality and intensity. Sansom remarks on the possibility of mistaking an anorganic for an organic murmur when the sound is apical in situation and the patient is nervous and excitable. He emphasizes the necessity of careful auscultation in the sitting position after a period of rest and without removal of the clothing as tending to avert awkward mistakes (in insurance work, for example).

Sansom says that anorganic apical murmurs are heard with greatest intensity in the neighborhood of, rather than immediately at, the apex; they are mesosystolic in time, soft in character and may exhibit a rhythmical crescendo and diminuendo in connection with respiration. He regards an intensified second pulmonic sound, especially if connected with enlargement of the cardiac cavities, as decisive of the organic nature of a murmur.

It is difficult to judge of the extent of a valvular lesion from the nature of the murmur, and it is better to reserve our judgment until we see how the lesion is going to affect the heart. In the abstract, however, a long, loud, harsh, obstructive murmur, indicates considerable interference with the blood current; while a soft, weak, short, regurgitant murmur, indicates considerable reflux. Generally speaking, ill-defined murmurs are to be regarded with suspicion, and as indicative of either a badly damaged opening or a very weak heart muscle.

While the mutability of anorganic murmurs is much more pronounced than that of organic murmurs, we must remember that the latter may be changeable at times and may disappear completely for variable period of time, without any demonstrable alteration in the physical character of the heart.* Again we may have chronic valvulitis with all the physical evidences of valvular disease except the murmur which may never be present during the history of the case. The absence of a murmur may render diagnosis very difficult. Fagge has applied the term *morbus cordii* to this class of cases and says they belong to the "sandy desert of cardiac pathology."

It becomes evident therefore that while a murmur is strong *prima facie* evidence of the existence of endocarditis, it is not *per se* absolute proof of its presence.

The diagnostic value of a murmur then, depends largely on the presence of such secondary changes in the heart

*The relative frequency of the disappearance of murmurs at the various valvular openings according to Musser is: first, mitral obstruction; second, aortic regurgitation; third, mitral regurgitation. No authoritative instances have been found of the disappearance of the murmur of aortic stenosis, or of tricuspid or pulmonary valvular disease.

itself, as may be looked for as the result of a specific valvular lesion. When a murmur is heard about a heart in which recent endocarditis can be excluded, and in which no secondary developments have occurred, the murmur is to be regarded as probably anorganic in character.

SYMPTOMS AND DIAGNOSIS.—In almost all instances the first symptom to call our attention to the presence of chronic endocarditis, will be a murmur. These murmurs have special characteristics, and their respective lesions occasion definite changes in the heart. They will therefore be considered separately.

Aortic Stenosis. The mean age at which aortic stenosis occurs is said to be forty seven, though it may occur in very young individuals. Men are affected more often than women, as in the former, from occupation and the greater frequency of arterial diseases, the aortic valves are under greater strain.

Aortic stenosis is usually combined with a greater or less degree of regurgitation, even though no regurgitant murmur be heard.

As the lesion of aortic stenosis causes interference with the escape of blood from the left ventricle, the increased intra-ventricular pressure during systole tends to cause dilatation which is opposed by hypertrophy of the left ventricular wall. This hypertrophy develops only to the extent necessary to overcome the obstruction at the aortic orifice, and the ventricular wall may become an inch thick. While there is, probably, always some increase in the size of the ventricular cavity, the condition is practically one of simple hypertrophy. Any marked degree of primary dilatation occurring in connection with aortic stenosis is (in the absence of myocarditis), due to concurrent aortic regurgitation.

In pure stenosis when compensation is once properly adjusted and conditions are favorable, failure of compensation may be deferred for many years.

In one case, a man with a well-authenticated history of rheumatic endocarditis with aortic localization from a single attack of inflammatory rheumatism, compensation lasted thirty years. Autopsy confirmed the diagnosis of pure stenosis. The heart weighed nine hundred and twenty-

five grammes. The man was six feet three inches tall and weighed two hundred and thirty pounds.

When muscular failure is developed, from causes already alluded to, the left ventricle is no longer able to stand the pressure, it dilates, relative mitral regurgitation occurs from stretching of the mitral ring and valves. The resistance thus offered to the pulmonary circulation is not compensated for by the right heart because the latter is already too weak to comply with such a demand. Then follows right ventricular failure with the usual features of ataxia of the circulation.

The subjective symptoms of aortic stenosis previous to the period of involvement of the mitral valve, are few and indefinite. There may be palpitation or slight præcordial pain. The pulse rate is usually normal, the rhythm regular, though it may be intermittent or jerky in character. It is usually slow, hard and diminished in volume or fullness. It strikes the finger gradually and while it may be compressible is never soft. The sphygmograph shows a tracing with a slanting up-stroke from weak percussion force, a blunted summit and ill-defined secondary waves in descent, or wide separation of percussion and tidal waves.

Faintness, syncope or dizziness from cerebral anæmia, especially on exertion, are the most characteristic subjective signs of aortic stenosis. These signs of arterial anæmia may be marked before the advent of rupture of compensation. When the latter occurs and the mitral valve becomes insufficient, the usual signs of venous engorgement appear.

Inspection will show—when compensation is perfect—an increased force and slightly increased area of apex beat, the position of which will be moved slightly to the left and downward. Later when dilatation occurs the area of cardiac motion may be greatly increased and may be heaving and irregular in character. Palpation determines the above features more distinctly. In the hyposystolic period the lateral displacement of the apex is greater than the vertical, as dilatation is now in excess. A systolic *fremissement* may at times be felt in the second right intercostal space, it may radiate to the ensiform cartilage.

Percussion determines nothing, unless dilatation of the

left ventricle is present, as hypertrophy sufficient to compensate for a fair degree of stenosis will not enlarge the heart enough to give reliable evidence of the same on percussion. Later the relative enlargement of the various cavities may be made out.

On auscultation we hear the characteristic murmur of aortic stenosis: a systolic murmur heard with greatest intensity near the sternal border in the second right intercostal space or over the third costal cartilage. (If the heart is much enlarged, and displaced from its weight, the murmur may be best heard as low as the fourth rib and at the left border of the sternum). The murmur is transmitted into the great vessels. It may be heard along the left subclavian artery and sometimes in the brachial artery and abdominal aorta. Behind it may be heard to the left of the spine about the third or fourth dorsal vertebræ. In rare instances it may be heard all over the right chest. In front the murmur diminishes below the third rib but may be heard as low as the xiphoid cartilage.

The murmur may be short or long. It is high-pitched and harsh in character and may be musical. I have heard an aortic stenotic murmur in a young girl that was audible at a distance of several feet from the patient.

The murmur of aortic stenosis is probably the most stable of all endocardial murmurs as regards location, character and constancy.

The following cases exemplify the lesion of aortic stenosis during the period of compensation, and also during the hyposystolic period of the disease.

Man aged 41 years, carpenter by trade. Suffered from rheumatism eleven years ago. Never had but one attack of rheumatism. Suffers at times, when exerting himself, from dizziness or faintness which necessitates sitting down and resting. At times has some palpitation of heart with a sense of disturbance in the præcordium. Never any distinct pain.

His pulse is 78, small and firm, and quite regular. There are no passive congestions, no œdema, no cough, no dyspnoea. The apex presents at the upper border of the sixth interspace one inch to the left of its usual situation. Percussion determines that the left border of dullness is displaced about an inch to the left. The right border remains unchanged.

The second pulmonic sound is not increased in intensity. A loud, harsh, high-pitched murmur is heard with systole in the aortic area. It is transmitted into the carotid artery and is very faintly heard at the xiphoid region. Its character and location is not modified by posture.

While there is a slight amount of dilatation of the left ventricle in this case, probably due to slight regurgitation early in the disease, the compensation is good at present and there is no regurgitation to be recognized. The mitral valves are competent and the case is *in statu quo*.

Girl aged 19, referred for treatment one year ago with marked failure of circulation. Improved under treatment. Failed to return until two weeks ago when her condition was much worse than it had ever been.

The patient had several attacks of rheumatism between 15 and 17 years of age. Has had slight rheumatic manifestations ever since. Recently she has complained of dyspnoea, some cough, faintness and marked cardiac palpitation. The palpitation has been extremely unpleasant to herself and distresses her at night.

On inspection you notice the extensive area of cardiac motion which is lifting and heaving in character. The apex is in the sixth interspace slightly to the left of the mammillary line. The left border of dullness is just outside the mammillary line on the level of the fourth rib, and the right border of dullness is one inch to the right of the right border of the sternum.

A murmur is heard having the same characteristics as in the former case except it is not so harsh or well defined. The second aortic sound is not clear, which indicates some regurgitation and which explains in part the dilatation of the left ventricle. The second pulmonic sound is very loud and the valves are evidently closing under great pressure. A long, soft, blowing, systolic murmur is heard in the mitral area, indicative of relative mitral regurgitation. There are a few oedematous rales to be heard at the base of the lungs.

This patient has developed rupture of compensation, and is passing from the hyposystolic period into a condition of asystolism. Through weakening of the heart muscle there has developed dilatation of the left ventricle, relative mitral regurgitation, dilatation of the right heart and asystolism is imminent. She will live but a short time. The arrhythmia is the irregularity of asystolism,—a permanent inability

of the heart cavities to empty themselves. One year ago this condition was threatening. There was a slight mitral leak with marked irregularity on exertion. Failure of the heart was averted by treatment, but her present condition is probably beyond the possibility of substantial improvement.*

Aortic regurgitation.—Aortic regurgitation occurs without stenosis more frequently than the contrary condition. It is frequently associated with mitra' lesions. According to Fagge only fifty per cent. of the cases of aortic regurgitation are of rheumatic origin. Virchow says that aortic regurgitation frequently occurs in chlorotic females from congenital causes.

The various conditions which cause atheroma of the aorta lead to aortic regurgitation. It may result from sudden and severe exertion. Dilation of the aorta may cause regurgitation either temporary or permanent. It is claimed that severe and prolonged muscular exertion may lead to aortic endocarditis resulting in regurgitation. Authentic cases are reported of distinct aortic regurgitation without organic lesion of the aortic valves.

As the lesion of aortic regurgitation allows of the return of blood to the left ventricles after its expulsion and during the diastole of the ventricle, the latter cannot accommodate the additional amount of blood which is thus added to that normally entering the ventricle at the same time from the auricle. The ventricle therefore dilates, and to effect the expulsion of the greater amount of blood hypertrophy is necessary, and from the combined development of these two conditions—dilatation and hypertrophy—we obtain an extensive degree of cardiac enlargement (the *cor bovinum* of the older writers).

While sufficient extra power is furnished through hypertrophy of the ventricular wall, this does not counteract the tendency to progressive dilation of the left ventricle if the leak is at all extensive. The dilatation gradually progresses until it becomes the dominant feature of the physical

*This patient died two weeks afterward. There was slight improvement in the condition of the heart for a few days. Three days before death there was sudden pain, swelling, and great tenderness of the liver, probably from embolic infraction.

alteration in the heart. When the dilatation becomes sufficient there occurs mitral insufficiency, pulmonary congestion, dilatation of the right heart and the same attendant symptoms as are present in the asystolic period of aortic stenosis.

From a prognostic standpoint it is important to recognize the primary and progressive nature of the dilatation in aortic regurgitation. Even if compensatory hypertrophy is well established the ventricle is constantly overloaded during diastole and compensation cannot be so long maintained as in aortic stenosis where dilatation may be postponed until myocardial degeneration weakens the muscle.

The subjective symptoms of aortic regurgitation during the period of efficient compensation, are not distinctive. There may be palpitation with a sense of disturbed cardiac action and rapid respiration on exertion or excitement, or the patient may complain of dizziness, vertigo, headache or *muscæ volitantes*, and sleeps with his head elevated. There may be paroxysmal pain at the base of the heart (due according to Peter to irritation of the basic cardiac plexus from dilatation of the ascending portion of the aortic arch), which radiates to the left shoulder and arm. When dilatation is marked there may be disagreeable throbbing in the head. Attacks of *angina pectoris* may occur.

On inspection, we notice increased area of cardiac motion and the displacement of the apex beat to the left and downward. Relative to the amount of hypertrophy present the lateral displacement of the apex is much greater than in aortic stenosis. When dilatation becomes excessive the apex may be in the seventh interspace and at the anterior axillary line. The whole side of the chest may have a heaving, pulsating motion. When we see an apex beat in the seventh interspace and an inch or two outside of the mammillary line we may be sure at once that if the displacement be due to valvular lesion that it is aortic regurgitation, for this position of the apex means extensive hypertrophic dilatation of the left ventricle and no other valvular lesion could produce this condition except aortic stenosis in its asystolic period.

Throbbing pulsation of the larger arteries especially the carotids, occurs when dilatation of the ventricle is

marked. The great volume of blood thrown into the vessels distend them suddenly and they as suddenly collapse and disappear. Capillary pulsation of the cutaneous vessels may be seen by rubbing the skin so as to produce a narrow line of hyperæmia. It is also observed in the matrices beneath the nails (Quincke and Ruault). When the arteries have become lengthened and tortuous a lateral motion may be observed, especially in the brachial, temporal or retinal vessels. Percussion shows that the right border of dullness is little if at all changed while the left is greatly displaced. The basic line of dullness may be lowered an inch or more from gravitation of the enlarged heart.

Palpation determines the lifting nature and extent of the cardiac motion. The area of apex impulse while extensive is not well defined as in aortic stenosis. The apex does not strike the finger as definitely as in the latter condition. A systolic thrill may be felt over the subclavian or carotid arteries due to the violence of the systolic impulse.

The pulse of aortic regurgitation has more individuality than that of any other valvular lesion. It is a large pulse and strikes the palpating finger suddenly. The wave is short and drops away from the finger quickly. It has been called the "Corrigan pulse," "Bellingham pulse," "water-hammer," "jerking," "splashing," "collapsing," "piston" pulse. Its characteristics are intensified by elevation of the arm. It is usually regular, though when dilatation is excessive the pulse becomes irregular both in force and rhythm, and when mitral insufficiency develops the pulse becomes smaller, more feeble and intermittent. By firm palpation of the wrist marked pulsation may be felt in the radial, ulnar and interosseous arteries. The sphygmogram of aortic regurgitation shows great amplitude, a beak summit, and absence of the dicrotic wave.

On auscultation we have a diastolic murmur. It accompanies or follows the second sound, which may or may not be audible in the aortic area. The second pulmonic sound can usually be heard with more or less clearness.

The murmur is heard best at the right edge of the sternum at the upper border of the third rib, or, if the heart is much enlarged, at the level of the fourth rib at the left

sternal border. It is sometimes inaudible at the base of the heart and heard only below the fourth rib at the middle or left edge of the sternum. Its direction of transmission is toward the end of the sternum and the apex of the heart. It is rarely heard behind. The arterial murmurs which are sometimes heard are not due to transmission of this murmur as is stated by Loomis. Like the double crural sound of Traube, and the double murmur of Durosier, they are due to vibration in the arterial walls and depend on the force of the arterial distension, and on lateral pressure on the vessels.

The first heart sound at the apex may be loud or indistinct.* A mitral murmur may occur from vibration of the valves without relative regurgitation (Shattuck).

In character, the murmur of aortic regurgitation is soft, low in pitch, blowing or swishing, usually long though it may be abrupt and short. It is very rarely high-pitched and musical. The prediastolic murmur (Flint's murmur), said to be associated with aortic regurgitation is rarely to be heard. It has never presented itself clearly in any of my cases.

Most authorities agree that the murmur of aortic regurgitation is the most constant and unchangeable of all murmurs. A number of observers, however, have reported cases of vanishing murmur of aortic regurgitation where autopsy proved the existence of aortic lesion.

The following case is of interest in this connection, though its nature is unproved as the patient is in good health, and we must remember, as Weismayr has lately pointed out, that the symptom-complex of aortic regurgitation may be due to accidental diastolic murmur in the aortic area; incompetency, without murmur; pseudo-insufficiency, without murmur or lesion.

Young woman, rheumatic history. Was told by her physician that she had heart trouble and cautioned against marriage. Five years later on contracting an engagement of marriage she came for advice. She presented a well-marked

*According to Traube loss of the first sound is due to gentle closing of the mitral valves under the increased intraventricular pressure and before the systole actually begins.

and characteristic murmur of aortic regurgitation, with a not very characteristic pulse. There was only slight enlargement of the left ventricle. The lesion was not deemed dangerous as there had been so little change during five years, and she was not discouraged from marriage which was shortly afterward contracted. Three years later the murmur had entirely disappeared, and during the last five years has not been present at a number of examinations. There has been, in the meantime, no change in the physical condition of the heart.

The following cases illustrate the difference in the progress of a slight and an extensive aortic regurgitation.

Man aged 43, laborer, six years ago had severe inflammatory rheumatism. Previous to this attack was perfectly healthy. Was told by his physician that the attack of rheumatism had affected his heart. Recovery slow, but was finally able to resume work and suffered no trouble until one year ago when he began to have pain about the heart, palpitation and dyspnoea on exertion.

On entering the clinic he was markedly dyspnoeic, had some oedema of the feet, congestion of the lower portion of the lungs, a troublesome cough. His heart was greatly enlarged from hypertrophic dilatation of the left ventricle. The apex was in the seventh interspace at the anterior axillary line. The right ventricle was dilated. There was a long, soft, diastolic murmur at the base, conducted to the apex. There was also a systolic apical murmur due to relative mitral regurgitation.

In this case compensation lasted only five years. How much longer it would have lasted if the man had been engaged in less laborious occupation, it is difficult to say.

Woman aged 42. Wife of a professional man. Had irregular attacks of rheumatism at 20 and 25 years of age. First came under observation when she was 30. At that time she had an aortic regurgitant murmur associated with a presystolic apical murmur. How long these had existed it was impossible to ascertain definitely. There was slight enlargement of the left ventricle, the apex being under the sixth rib three-fourths of an inch to the left. There was moderate dilatation of the left auricle and a slight thrill could be felt. There was occasional pain around the heart, and at times an irregular pulse.

A few days ago, about twelve years after the original examination, there was found practically no change in the heart; the apex was in the sixth interspace one inch to the

left. The heart's action was somewhat irregular in force, but not in rhythm. The patient expressed herself as having been comparatively comfortable for several years except when her heart would become disturbed from excitement or worry. The same murmurs were to be heard as at the original examination.

In portraying the early American colonial physician, Osler beautifully remarks and quotes, "The Colonial settlements were contemporaneous with the revival of medicine in England. Fellow-students of Harvey at Cambridge might have sailed in the *Mayflower* and the *Arbella*. The more carefully planned expeditions usually enlisted the services of a well trained physician, and the early records, particularly of the New England colonies, contain many interesting references to these college-bred men. Giles Firman, who settled in Boston in 1632, a Cambridge man, seems to have been the first to give instruction in medicine in the new world. The parsons of that day had often a smattering of physic, and illustrated what Cotton Mather called an 'angelical conjunction.' He says: 'Ever since the days of Luke, the Evangelist, skill in physick has been frequently professed and practiced by persons whose more declared business was the study of divinity.' Firman himself finding physic 'but a meane helpe,' took orders. These English physicians in the New England colonies were scholarly, able men. Roger Chillingworth, in Hawthorne's 'Scarlet Letter,' has depicted them in a sketch of his own life: 'Made up of earnest, studious, thoughtful, quiet years, bestowed faithfully for the increase of knowledge; faithfully, too, for the advancement of human welfare; men thoughtful for others, caring little for themselves, kind, just, true, and of constant if not warm affections'—a singularly truthful picture of the old colonial physician."

CLINICAL LECTURE ON OBSTETRICS AND GYNÆCOLOGY.—THE EXTENSION OF INFECTION FROM THE ENDOMETRIUM—By Denslow Lewis, M. D., *Professor of Gynæcology in the Chicago Polyclinic.*

(Delivered in Cook County Hospital, Chicago. Stenographically reported by Bertha Barnet.)

Preliminary to a consideration of the effects of infection when occurring within the uterus, it is necessary to recall the exact conditions that prevail and the circumstances that make possible the entrance of pathogenic bacteria, as well as those other circumstances that favor their subsequent development. Pregnancy has produced many changes in the organism. The passage of the child inevitably and invariably causes some traumatism. The separation of the placenta necessarily leaves a wound. The thrombosis incident thereto is a potential danger which cannot be underestimated. The process of involution is of itself to a great extent an endosmosis and the effete products which circulate in the blood during the puerperium predispose to systemic derangements. Moreover, excessive hæmorrhage at the time of labor, and various other accidents which I will not now enumerate, may favorably dispose to microbic entrance and propagation.

Two factors are essential for infection, namely, the presence of certain microbes and the presence of conditions suitable for their growth. Among these conditions may be mentioned moisture, warmth and a proper soil. In the puerperal woman, as I have pointed out to you, the conditions are especially favorable for the culture of microbes and for the transmission of themselves or their products throughout the system.

It has been stated that infection may extend from the endometrium through the vessels of the placental site and the conditions of thrombosis, embolism and metastatic ab-

cess formation have been described. Infection through the lymphatics has been considered as well as its probable relationship to the condition known as phlegmasia alba dolens. I have also told you about the results of infection subsequent to wounds of the portio vaginalis, vagina and vulva which often permit the development of abscesses within the surrounding tissue. In addition to all this we realize how infection may extend by continuity of epithelial surface to the tubes, the ovaries or even upon the peritoneum.

Nor will you forget, I hope, what was said regarding the presence of pathogenic bacteria within the vagina. You will agree with me, without any extended discussion of this subject, that it is but reasonable to assume that pathogenic bacteria may be present in every case. If this is admitted and if we admit, as we must, that there exist in every puerperal woman conditions favorable to bacterial growth, there need be no surprise at the frequency of infection following labor, nor is any argument necessary to establish the desirability of consistent asepsis during pregnancy, parturition and the puerperium.

Let us assume, in a given puerperal case, that the infection-atrium, by which term we mean the place where a microbe gets into the body, is within the uterus. Let us also assume that, in the case under consideration, no infection of portio vaginalis, vagina or vulva has occurred. We know about the blood clots at the placental site; we know about possible placental remnants and portions of the decidua. We have considered saprophytic infection which produces intoxication and we recall the possibilities in reference to thrombosis, embolism and metastatic abscess formation. It is not, however, to be assumed that these conditions are the inevitable or indeed the usual results of endometric infection. It more often happens that here, as well as in cases of infection of vulva, vagina, or portio vaginalis, the phagocytic action induced is sufficient to arrest or limit the extension of infection.

We often find then within the uterus results identical with those observed in cases of infection of the lower portion of the parturient canal. Phagocytosis may here be successful and resolution may occur. Phagocytosis may be

only partially successful so that systemic infection is prevented and local suppuration results or an infected embolus occasions a metastatic abscess. Phagocytosis may fail and the blood itself may become infected, giving rise to acute bacteriæmia which may be rapidly fatal. Phagocytosis may limit invasion at the infection-atrrium so that the underlying tissue escapes, but the infection may extend by epithelial surface even to the peritoneum.

Your text-books tell you about these conditions. They discuss etiology and pathology and they detail in regular order regarding symptomatology, diagnosis, prognosis and treatment. Unfortunately for the practitioner the infective diseases observed during the puerperium can rarely be outlined as entities. They do not show themselves properly labeled so that we can say "Here is such and such a disease, we will turn to the index in our book and find out what to give for it." We are confronted by symptoms which require interpretation. We observe facts which admit of different explanation. We are debarred oftentimes from systematic and thorough investigation, for our knowledge of bacteriology teaches us the danger of contaminating the puerperal patient by an extended examination.

To observe odoriferous lochia and to diagnose endometritis is not enough. We must know if it is best to give a uterine douche, to curette the endometrium or to let the patient alone. To elicit pain by pressing on the abdomen and to say "Here is peritonitis" is of little real value. We must understand if pus is collecting and how it can safely be evacuated. We must know if adhesions are forming which will produce intestinal obstruction. We must determine if the chances are in favor of resolution or if it is best to make a vaginal or abdominal section or indeed to do a pan-hysterectomy and our decision, to be of value, must not be made too late. To notice pelvic pain, a chill, a rise of temperature, an acceleration of pulse beat and to diagnose "puerperal fever" is the height of absurdity only equalled by attempts at treatment which consist of the exhibition of large doses of antipyretics.

The problems which the obstetrician is called upon to solve when in the presence of infection occurring during the

puerperium are among the most difficult and the most important in the whole field of medical practice. To satisfactorily determine in regard to consistent treatment it is necessary to have a knowledge of facts and possibilities as well as a mind trained in logical reasoning so that proper inferences may be drawn from the observation of symptoms. I confess that to the solution of these problems I have given my best thought for the past twenty years. I must also add that very frequently I find my judgment at fault and I am unable to make a scientific diagnosis which shall include the probable outcome of the case and indicate a direct method of treatment. In many instances the best treatment I can suggest may be designated as a compromise and, I regret to say, at times I am forced to await developments or to resort to temporizing measures simply with a view of relieving the severity of certain symptoms.

Now let me tell you, as a basis of exact knowledge, just what may take place under the conditions mentioned. The endometritis which results from infection may be due to the presence of bacilli and we then have putrid infection with sapræmia as a consequence, as I have already explained. The endometritis may be due to infection by micrococci—chiefly the streptococcus or the staphylococcus—and in this event the tendency is toward invasion and the infection is said to be septic. These varieties of infection may occur separately, the septic form being rarely absent in serious cases, and the putrid form often occurring without the cooperation of pus cocci, especially when it is due to the presence of saprophytes. At other times septic infection may follow the putrid variety and very greatly add to the gravity of the situation.

The symptoms of infection of the endometrium are not pathognomonic. It is my practice to examine puerperal patients when a chill occurs followed by pelvic pain, a rise of temperature and an acceleration of the pulse beat, provided the details of the labor are known to me, aseptic measures have been instituted, and I am sure that the bowels have acted freely, that there is no retention of urine and no disturbance in the breast. When I am ignorant of these matters, my fear of conveying infection may cause a delay in this

examination until I think likely that the symptoms may be due to some conditions other than those plainly evident. When I see the patient for the first time early in the puerperium, when I have but imperfect knowledge of the facts in reference to her labor, I may feel justified in making an immediate examination and in resorting to a uterine douche, or a curettement as, you will remember, I have already described in detail. It is possible the examination, whenever made, may reveal a condition of affairs which satisfactorily accounts for the patient's condition. If suppurating surfaces are found on the vagina or the portio vaginalis, if there is evidence of beginning infection within the subperitoneal pelvic cavity, it is probable the endometrium has escaped infection—at all events, as a matter of practice, it is now injudicious to explore the interior of the uterus simply as a routine measure.

Should no condition of the lower portion of the parturient canal or the parts immediately surrounding it indicate local infection, the character of the lochia will be considered. It will be remembered that they often become foetid in consequence of an admixture of secretions from wounds of the portio vaginalis or vagina. In the absence of any evidence of such traumatism we will recall the details of the labor, as far as we can, in order to decide as to the probability of retention of pieces of placenta or membranes, the occurrence or persistence of postpartum hæmorrhage being a probable indication of such retention. We will also seek to determine regarding the probability of infection having occurred subsequent to faulty methods of delivery or imperfect asepsis. We decide also as to saprophytic infection, and if there is anything in the uterus to be washed away we give a uterine douche.

It is customary for most authors to recommend in all cases of infection of the endometrium, however occurring, one thorough uterine douche of some antiseptic, as, for instance, a 3 to 4 per cent. solution of carbolic acid or a 1 to 2 per cent. solution of lysol. It is thought probable this douche may destroy some microbes in situ as well as wash away all material that can serve as a suitable soil for their growth. I have no objection to this practice but I have

seen but little good result from it except in cases where there is saprophytic infection due to retention of blood-clots or some remains of placenta or membranes. In these cases, as I have sufficiently explained, a uterine douche is necessarily of benefit. In other cases it is not unusual for us to fail to recognize septic infection of the endometrium until the microbes which cause it have produced results oftentimes far removed from the infection atriium. For this reason the antiseptic douche is not infrequently given too late.

When invasion occurs within the uterus, when mucous membrane, muscle or any other uterine tissue becomes infected, the course of the pathological condition is the same as when similar tissue elsewhere in the body has been subjected to the action of the same microbes under similar conditions. The location effects no change in the process of infection except as those circumstances incident to the puerperium which favor microbic culture may tend to determine very serious consequences. Infection, then, within the uterus, as upon the vagina, may end in resolution or in supuration. The pus formed may escape through the os and cicatricial tissue may occasionally take the place of the mucous membrane of the endometrium, as occurs in the case of the vaginal mucous membrane when infected. In most instances, however, owing to the presence of Nabothian glands, there is ultimately a reproduction of the mucous membrane. The pus may form in the uterine musculature and may burrow very much as it does within the subperitoneal cavity of the pelvis. It cannot burrow to the same extent for muscular fibres cannot be pushed up in the way I have described when speaking of the peritoneum in connection with the formation of certain pelvic abscesses. In course of time the greater part of the uterine musculature may be invaded, sloughs may form and the condition known as putrescentia uteri may result. The process may go on right through the uterus causing perforation into the abdominal cavity. It may also cause portions of the uterus to slough off, so that the walls of the uterus may become as thin as a piece of paper. Garrigues reported a case in 1882 where both an anterior and a posterior rupture occurred. At the autopsy a portion of the uterine wall, four inches

long, two inches wide and one inch thick was found lying perfectly loose in the interior of the uterus. It had been sloughed off by an ulcerative process which had burrowed beneath it. In another case a detached piece of the uterine muscle was found wedged in the lower portion of the cervix completely preventing the escape of lochia and pus.

Even in these cases of abscesses of the uterine muscle the time may come when phagocytosis finally triumphs. The pus then ceases to be septic and is encapsulated as cheesy deposits or else there is a rupture of the abscess, and an escape of its contents. Such abscesses are often mistaken for an abscess of lymphatic glands from which they may be distinguished by the absence of a smooth enveloping membrane and by their irregular and but slightly rounded form.

Conditions such as I have described cannot long continue without extension of the infection beyond the uterus. The blood vessels and especially the lymphatics serve as channels for the propagation of the morbid process. Indeed, they often become infected without appreciable or at best but insignificant infection of the uterine tissues. The results in these cases are identical with the results observed in infection of the parts when occurring in consequence of traumatism of portio vaginalis, vagina or vulva. On the sides of the uterus and in the upper portion of the broad ligament the effects of infection are especially noticeable. The cellular tissue becomes oedematous and swollen and in serious cases pus is found. The infection of this tissue may have the most disastrous consequences, for an extension may occur to the peritoneum or the pleura or the infection may speedily become general. Following the course of the lymphatic vessels, unless arrested in some of the glands within the subperitoneal cavity of the pelvis, the infection extends through the spermatic vessels upon the iliac fossæ or through the uterine lymphatics into the retro-peritoneal space. It may extend, if the patient lives long enough, even to the diaphragm or posterior mediastinum. In rarer instances it extends in the cellular tissue along the great vessels of the thigh under Poupart's ligament constituting phlegmasia alba dolens and more rarely still it may extend

along the round ligaments through the inguinal canal and here set up an inflammation and a suppuration of the lymphatic glands of the inguinal region. An infection of the cellular tissue is liable to terminate in an extension to different lymphatic glands or, quite often, to the peritoneum.

Infection of the lymphatic vessels is characterized by thrombosis. The coagulated lymph fills out the vessels causing them to present a yellowish-white appearance like that of pus. The uterine lymphatics have many anastomoses; when these vessels are filled out with coagulated lymph they are often mistaken for abscesses from which they may be differentiated by observing their connection with other lymphatics, the glistening wall of their enveloping membrane and by the demonstration of their endothelium. The favorite locations of these thrombosed lymphatics are, as already indicated, the sides of the uterus, especially where the tubes are inserted, and the upper portion of the broad ligament extending to the hilum of the ovary and into the interior of the ovary as well. As the important trunks of the lymphatic system are mainly superficial, it is easy to demonstrate a uterine lympho-thrombosis by simply incising the peritoneum which covers the uterus. Not infrequently it will be found that the extension has occurred from a large laceration of the portio vaginalis. The thrombosis rarely extends beyond the pelvis but in exceptional instances it may reach even to the thoracic duct.

General infection of the peritoneum occurs more often from an extension through the underlying connective tissue, which, as you know, consists of lymphatic spaces, than through the fimbriated extremities of the tubes or directly through the uterus. The infection in these cases is of the entire peritoneum as would be expected when the etiology of the condition is remembered. The infection is usually septic and, as it occurs in the manner stated instead of from an extension through the tubes, there is rarely an attempt at localization by the formation of adhesions to kinks of intestine or neighboring viscera. There is liable to be an exudate of one or two quarts in amount,—a thin, brownish-colored, stinking secretion or else at times a secretion purulent in character. Pus is more often observed in connec-

tion with the ovaries, the broad ligaments or Douglas' cul-de-sac and but rarely on the peritoneal surface of the uterus. The peritoneum itself, especially on the intestines, is often dark brownish-red in color and glistening in appearance. In acute cases, where death occurs in perhaps forty-eight hours, all pathological signs may be absent or at best may only become apparent on injection and coloring of the peritoneum. In less serious cases adhesions may form in time and the suppuration may become encapsulated in different parts of the abdominal cavity.

Infection of the ovaries is a frequent complication or concomitant of septic infection of the peritoneum. It is essentially an interstitial oöphoritis that results, due to extension from the broad ligament through the hilum of the ovary to the stroma. In the most severe forms the parenchyma may secondarily become infected and an infection of the contents of the Graafian follicle may cause the death of the ovum. At the autopsy the ovaries are found swollen and enlarged to three or four times their usual size. A section shows the stroma either infiltrated with serum and glistening in appearance or else filled with pus, perhaps discolored and reduced by ulceration to a fluid pulp, thus constituting the condition designated as *putrescentia ovariorum*.

In the same manner, but very much more rarely, the pleura may also be infected. The extension by way of the lymphatics to the posterior mediastinum may occasion a pleuritis just as a peritonitis is started up within the pelvis. As most patients die before the infection has time to extend to the thorax, a pleuritis is necessarily of rather rare occurrence. When it does occur it is usually one-sided, more often on the left side than the right, and is accompanied by a purulent or ichorous exudation.

The lungs may become infected by an interstitial pneumonia exactly as Weber and Buhl have described in the newborn child, under the name of interlobular pneumonia. The pericardium may also participate in the infection, and an ulcerative endocarditis may have much to do with determining serious consequences.

The liver may be swollen and show beginning decompo-

sition. It more often presents different foci of infection than an infection of the entire viscus. Occasionally there is jaundice due to interstitial inflammation. In serious cases the spleen may also be affected. It is usually enlarged and its parenchyma, now of a chocolate color, is softened and greasy.

On the skin there often appear petechiæ, erysipelatous or pemphigus eruptions, not infrequently mistaken for scarlet fever. The intestinal canal may show catarrhal inflammation accompanied by hæmorrhage and ulceration. More rarely does diphtheria of the large intestine occur from infection from the lochia by way of the anus.

The urinary bladder may ulcerate in different portions of its wall, more especially above or between the inoscultations of the ureters. The mucous membrane may have become necrotic from pressure and can very easily present a diphtheritic appearance. The kidneys, when infected, usually present a diffuse general swelling. They but rarely show numerous foci of infection in the form of purulent collections in the medullary substance, or cortex, except in consequence of metastatic abscess formation. In these foci it is always possible to demonstrate the presence of cocci—often streptococci, by culture or the aid of the microscope.

Now here are the facts regarding infection; here, in few words, is a brief description of the possibilities. What are we going to do about it? The treatment would be simple, almost self-evident, if we could recognize the progress of infection in time to anticipate the serious consequences that often result. The treatment would consist of well understood methods of practice, that is of the application of the simplest surgical principles to the most ordinary results of septic infection wherever occurring. If infection was noticed on a free surface we would irrigate with some antiseptic solution, or apply powdered boric acid or other antiseptic powder. If suppuration supervened, we would provide free escape for pus and we would resort to incision, drainage, irrigation and other methods which we know favor the healing of abscess cavities. If the burrowing of pus within the ovaries or the uterus became evident or seemed inevitable we would at once resort to the removal of

these organs. If the blood itself be invaded we will realize that something must be done to destroy the pathogenic microbes by direct antagonism or by some method of serum therapy or else that conditions favorable to their growth must be minimized by venesection which diminishes their number, by transfusion of saline solution which dilutes their pabulum and favors their elimination, or by the exhibition of stimulants and tonics which enable the patient to continue to live until the crisis is past—that is, until the full effect of the microbes or their products has been successfully withstood.

Moreover, if we could only recognize the extension of infection there is much that we might do. If we knew that there were present bacteria in sufficient number and of sufficient virulence to invade the uterine musculature, we would not hesitate at a hysterectomy of the puerperal uterus. If we realized that an abscess of tube or ovary was inevitable an abdominal section would at once be made so that these organs could be removed. If circumstances justified the supposition that the peritoneum could not escape invasion the course of treatment is less clearly defined but the attempt would be made to limit the extent of the infection and to provide free drainage for all pus that might form as well as to favor, as much as we could, the localization of the septic process.

Theoretically the treatment is simple; practically it is most difficult; and the difficulty occurs because, with our present knowledge and with the means now at our disposal, a scientific and comprehensive diagnosis is often impossible until too late. I hope I make myself understood. A diagnosis of uterine abscess to be of the greatest value must be made, if you will excuse the Hibernianism, before the abscess has formed. A diagnosis of infection of the peritoneum should be made before it occurs. I mean here that the conditions that favor such an infection must be duly appreciated and the probabilities of the supervention of peritoneal complications in any case of sepsis must be fully realized so that suitable means may be adopted in time to prevent or limit disastrous consequences.

How shall we make such a diagnosis? I can tell you only

inferentially. I can give you no definite rules. We approach the borderland of the unknown both as regards pathology and therapy. Vaginal incision to evacuate pus from a suppurating ovary, the removal of the septic uterus and the emptying of adjacent abscesses are all therapeutic measures of comparatively recent date, well recognized theoretically but not as yet thoroughly understood so that definite direction can be given in reference to indications or technique. In addition, it may safely be said that our knowledge of serum therapy is still in its infancy. Indeed our knowledge of bacteriology is far from complete, especially in its relation to infection of the pelvic contents at the time of the puerperium.

With so much yet to learn it is no wonder that our results are at times imperfect. The progress already made both as regards diagnosis and treatment is certainly most gratifying. There are many failures, but it must also be said that sometimes a life is saved. There is at last a lifting of the cloud which for countless centuries has obscured our vision. We begin at last to see clearly, for modern science now points out the way and another generation will unquestionably find the indications well determined, the technique thoroughly perfected and the diagnosis satisfactorily assured in the class of cases we are considering.

In the meantime, what are we to do? I will tell you what I am in the habit of doing, and I will attempt an explanation of the reasons that induce me to favor different plans of treatment. I very freely again confess that at times it is impossible for me to arrive at a satisfactory method of treatment, and that in many instances the treatment instituted is at best but tentative. The consideration of individual cases, and many of them, together with the observation of symptoms, pathological conditions and the effect of treatment can alone in time enable us to arrive at satisfactory conclusions in reference to the proper management of these serious cases.

Let us consider the case of the patient before us. She was delivered in a tenement house by a midwife, and some days after the birth of her child she was brought to the hospital on account of pelvic pain and high temperature. For two days after delivery the patient did not seem ill. She

complained of thirst and was given a drink of cold water by a neighbor. Soon afterwards she had a chill which was followed by fever. The midwife had an explanation for her condition. She assured the friends that the cold water had, of course, produced a chill, and she deplored the abject ignorance which had permitted a recently delivered woman to drink cold water. The neighbor, however, had had four children of her own, and for that reason she considered herself an authority on all matters pertaining to the practice of midwifery. She did not coincide with the midwife in her diagnosis but asserted that the chill was due to the influx of milk, and that anyone who had the slightest knowledge of obstetrics should understand that "milk fever" was to be expected the second or third day of the puerperium. She had had the same thing occur in her own case, and her life had been saved by proper massage of the breast. The patient's husband was in a quandry, so after noting the continuance of the fever and the progressively unsatisfactory condition of the patient, he decided to send her to the hospital.

It was found on admission that the temperature was 103° and the pulse 120. There was pelvic pain, not very severe when the patient was at rest, but increased on movement, and when pressure was made over the symphysis. The functions of the bladder and rectum had been properly performed and the lochia, while odoriferous, were not offensive nor abnormal in amount. Lactation was well established and the breasts were not congested nor tender; no laceration of the perineum had occurred. The labor had apparently been normal in every respect, but in the absence of definite information, I thought it reasonable to assume that antiseptic measures had not been instituted and that the patient had been infected by the midwife at the time of labor.

Now, what would you have done in this case? The first thing to be determined is whether it is advisable to do anything. The first question to ask ourselves is regarding the justifiability of an examination. Had the chill and fever occurred later, had the lochia been markedly offensive, had the bowels been constipated or had retention of urine

been noted it is possible antiseptic vaginal douches and cathartics would have been advised, a catheter would have been passed, and a uterine douche would have been given. Had suppuration been seen around a perineal laceration, or had there been evidence of mammary infection or any derangement of lactation, it is possible the symptoms could have been satisfactorily accounted for by the conditions observed. It is to be remarked in this case that while puerperal convalescence was apparently progressing without incident, there occurred suddenly in the second day, chill, fever and pelvic pain. What can occasion these symptoms at this time? In the absence of malaria, appendicitis, or some other disease in no way referable to the puerperal state, they mean infection of one kind or another in case delivery has been properly accomplished under aseptic conditions and nothing interferes with normal involution. I mean if there is no constipation, no retention of urine, no abnormality of lactation, no other condition, as I have often described, which can obscure the diagnosis that in case these symptoms appear there is infection. Is the infection putrid or septic? We infer the former condition if lochiometra be present, or if there be evidence of retention of placental remnants or undue hæmorrhage.

In the case before us it was reasonable to diagnose the presence of infection. The next thing to know was its location, for as we had no knowledge of the conditions that prevailed at the time of labor there were many possibilities that might influence our treatment. We saw no abrasion of the skin covering the perineum, but a laceration might easily have occurred without involving the skin. There might also be some traumatism of vagina or portio vaginalis. There might be an infection in the tissues surrounding the vagina or uterus, as well as in the uterus itself. Moreover, in this case there had been no intelligent examination prior to labor. There might be tumors, pus tubes, or a number of abnormal conditions which could have a direct bearing on the production of the symptoms and which could only be recognized by examination. These considerations determined my action. The patient was placed upon the operating table and given a vaginal douche.

My hands were disinfected, and I proceeded to examine her in the usual manner.

It was noted first that there were no abnormalities of structure present, nor any lacerations of vulva, vagina or portio vaginalis. There was no evidence of infection of tube, ovary, or areolar tissue. The uterus was not appreciably enlarged, but it was unduly tender on pressure. The only explanation for the symptoms present was an infection of the endometrium, probably through the placental site. Perhaps there was only saprophytic infection. This is possible, but in that event I should have expected offensive lochia, and it would not have been unreasonable to look for severe after pains, due to the efforts of the uterus to expel retained membrane or portions of the placenta.

Having determined this much it is important to know more before deciding on a proper course of treatment. If we knew that the virulence of the microbes was sufficient to produce invasion of the uterine musculature, if we knew that infection through the lymphatics would occur so that subsequent infection of the peritoneum was probable, our plan of action would be well determined and admit of no discussion. If we feared infection through the veins and the detachment of infected emboli with the development of metastatic abscesses in different parts of the body, we would have no difficulty in knowing what to do. If we knew the blood itself would probably become invaded with all the dire effects of acute bacteriæmia we would not hesitate in our treatment. We would at once remove the uterus by colpo-hysterectomy.

In the case before us, while I was forced to admit that all these eventualities were possible, I could not bring myself to believe that such an important undertaking was justifiable. It would mean a serious operation performed under unfavorable surroundings. It would mean no more children for this woman. It would mean an increase in the risk of life which should never be incurred unless the benefits to be derived were plainly apparent. The indications did not, in my opinion, exist that would warrant such a procedure, and yet, I must tell you frankly that it was eminently proper to consider such a method of treatment, for if any good is to be expected from hysterectomy during the puerperium it is

decidedly advantageous to perform the operation at the earliest possible moment.

My judgment in this case was that the infection was probably confined as yet to the endometrium and that it would not extend to any dangerous extent. I thought probable that the infection was septic rather than putrid, but this differentiation of diagnosis was relatively unimportant as I decided to give a uterine douche of a one per cent. creolin solution. This was done and the temperature was reduced two degrees in a few hours. I then directed the administration of calomel in one-sixth grain doses every two or three hours, the ingestion of large quantities of milk and water, together with a nutritious liquid diet and sponging of the body twice a day, and oftener if the temperature again reached 103°, which it never did. In the course of a few days the condition of the patient had decidedly improved. The calomel produced several bowel movements a day and the tenderness over the symphysis was markedly diminished. I then thought it advisable to substitute strychnia in doses of one-fortieth of a grain every four hours. This treatment has been continued for the past week, and the patient is now practically well.

I hardly need to say very much in explanation of the course of treatment adopted. The uterine douche was intended to wash away any detritus that might be present as well as to attack the microbes in situ. The calomel in small doses was given to produce free catharsis and to remove any stray microbes that might have found their way to the peritoneal cavity. A large quantity of water was given to favor diaphoresis and diuresis which might possibly remove some microbes or toxins from the blood. A nutritious liquid diet was recommended for the same purpose as well as with the view of keeping up the patient's strength. Sponging of the body was advised because we know from our experience with typhoid fever that it is an effective agent in reducing temperature, and because we have determined in the management of cases of uric acid diathesis that it is a most effectual means for favoring the elimination of toxins by the kidneys.



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Notes and Comments.

Every physician should keep well in mind the contagion of the discharge of primary syphilitic sores, and the danger, though not so great, of the discharge from secondary processes. In making examinations one should always have this danger in mind, and never use the hand or finger upon which there is a fresh abrasion, in any case. Or if such hand or finger must be used, then the abraded part or parts should be thoroughly disinfected with bichloride or carbolic solution and then carefully protected by a rubber shield the integrity of which is positively known, or by the use of collodion. Too much care cannot be employed in this direction, the lack of which has caused untold suffering in the case of many a professional man.

* *

There are some things in the life of the true physician that are more than meat and bread, and it is only occasionally that such sentiments—if such they may be called—are well expressed. It is only in the form of an essay, an essay which is the expression of the fireside reverie and the outcome of a long and conscientious experience, that we find these words of cheer; and it is a distinct pleasure, and a distinct matter of profit withal, to have these things frequently and well placed before us. We have of late noted a charming address by a cultured English physician, Dr. Goodhart, which was delivered before the York Medical Society. Among other things we find a bit of quotation from Maclaren, and a following thought thereon.

“ ‘There’s nae pooer in heaven or airth like luvie,’ Margaret said to me afterwards. . . . ‘Oor herts were as water afore Tammas’s words, an’ a’ saw the doctor shake in his saddle. I never kent till that meenut hoo he had a share in a body’s grief, an’ carried the heaviest wecht o’ a’ the Glen. A’ peeted him wi’ Tammas looking at him sae wistfully as if he had the keys o’ life an’ deith in his hands.’ ”

Thus there does grow up in the medical man's being a sense of a peculiarly close interest in the life that in God's good providence he has helped to steer through the quicksands of illness, and he comes to look upon his patients 'as in some sort his children, and to claim from them an allegiance in all matters pertaining to their health, which they at the most but very imperfectly recognize, and the binding nature of which they cannot therefore understand. But this relationship between men and their family practitioner is a very valuable one, and should be tenderly cherished. For I think there can be no doubt that the tendency in modern life is to change this old, and, as I think, salutary order of things. But, as I have already said, you you may go to the great man in the town, but you still have a constitution or a temperament, of which you know little, and he may see nothing in one short interview. The three orders of medicine—medicine, surgery and general practice—are still as necessary as ever they were. You may do without the last-named when there is nothing the matter with you, you may go to the specialist in town for an opinion on an obscure case, or to settle a moot point in treatment; but when one is really ill, then it is that you want, and cannot do without, the man with the cheery voice, the kindly smile, the deft-hand, the many-sidedness of resource for easing pain born of long experience in many fields, and with it all the ready self sacrifice that at times like these makes the medical man almost seem to be "He that sticketh closer than a brother."

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A summary contained in the last annual report of the Massachusetts State Board of Health shows that during the forty years previous to and ending with 1895 there was a steady rise in the mortality rate in that State from pneumonia. The death rate per 10,000 living of the first twenty years of the forty year period was 12.2; of the second 16.8; and of the eight five-year periods respectively 9.6, 11.9, 11.8, 14.7, 14.2, 16.0, 16.4 and 19.7.

In this connection it may be instanced that no doubt we are constantly approaching more closely and scientifically the ætiology of this disease; in witness whereof may be quoted conclusions reached by Dr. R. M. Pearce, Assistant

Pathologist of the Boston City Hospital, upon an investigation of 121 cases (*Bos. Med. and. Surg. Jour.*, Dec. 2). "The pneumococcus is almost universally present in true lobar pneumonia and its complications. Its presence in pure culture in the majority of cases indicates its ætiological relation. General infection, in fatal cases, is quite frequent, and therefore of considerable importance, both from a bacteriological and from a clinical point of view."

* *

Osler states that out of 389 cases of typhoid at the Johns Hopkins Hospital up to May 15, 1895, one and three tenths per cent. were between sixty and seventy years of age. In New York, according to the board of health reports upon recent figures 14 per cent. of typhoid cases were forty-five and over 11.3 per cent. were between forty-five and sixty-five and 2.6 per cent. were sixty-five and over.

* *

A severe epidemic of small-pox lately swept over Gloucester, England, and now that the storm has passed and statistics of the invasion can be secured it develops that added testimony in behalf of, and more definite figures about the value of vaccination occurs. Not that the efficacy of vaccination is particularly in need of such support, for scientific minds almost to a man are a unit upon the inestimable value of this preventive means. And yet there are antagonists, and people get to be convinced not exactly by argumentation, but by the presentation of bald facts—cold figures about which there can be no discussion. Dr. Sidney Coupland's report to the Royal Commission on vaccination conveys the following information in regard to the Gloucester epidemic.

"Vaccinated sufferers numbered 1,211, or 61.2 per cent. of all attacks; unvaccinated, 768, or 38.8 per cent.; mortality rates were, in the vaccinated (120 deaths), 9.8, and in the unvaccinated (314 deaths), 40.8 per cent. of attacks. No vaccinated infant was attacked, but 21 of the 22 unvaccinated patients under one month died (95.4 per cent.), and 40 out of other 63 unvaccinated infants under one year died (63.5 per cent.); and whilst of 26 vaccinated children attacked under 10 years only 1 died (3.8 per cent.), as many as

218 out of 595 unvaccinated attacks of like age proved fatal (36.6 per cent.). As regards children exposed to infection, of 14 vaccinated infants, not one was attacked; of 153 unvaccinated infants, 80, or 52.2 per cent., were attacked; of 258 vaccinated children, aged 1 to 10 years, 24 or 9.3 per cent., were attacked; of 1,178 unvaccinated children of like ages, 537, or 45.6 per cent., were attacked. As showing the protection of vaccinated persons against attack through life, at ages 10 to 30, the rates were: of vaccinated persons, 32.6. and of unvaccinated persons, 53.9 per cent.; at ages over 30 years the respective rates were 31.7 and 40.5 per cent. As demonstrating the undoubted benefits of vaccination, even within the incubation period of small-pox, it is stated that of 1,475 "unvaccinated," persons exposed to infection in invaded houses, 822 "remained unvaccinated," and 73.4 per cent. were attacked; whilst of 653 "under vaccination," only 13.0 per cent. were attacked."

* *

Touching the physiology of the renal secretion, to which some reference was made, and some deductions drawn, by Michael's article in the December issue of this magazine, an historical review may be quoted from a recent address by Dr. C. B. Marshall, Assistant Professor of Medicine at Cambridge, Eng. (*Brit. Med. Jour.*, Dec. 11):

"In 1842 Bowman advanced the theory that the water and salts come through the glomerulus, and the urea and similar nitrogenous products, by a process of secretion, through the epithelium of the convoluted tubules. He was followed by Ludwig (1844), who advocated what is known as the mechanical theory. According to him all the substances of the blood plasma, except albumin, filter through the glomerulus, and the proper concentration of the urine is obtained by reabsorption of the water in the tubules further down. This theory was modified by Kuss (previous to 1856), who stated that all the constituents of the blood plasma come through the glomerulus; the albumin and water being reabsorbed in the tubules as Ludwig supposed. Subsequently Heidenhain (1875) advocated a purely secretory theory; most of the water and salts, according to him, are secreted by the glomerular epithelium; the remainder, with

the urea and other products, by the epithelium of the tubules. Senator (1881) controverted this view and practically brought us back to the theory of Bowman. He was afterwards joined by Munk, and together (1888) they formulated the theory that the water and urinary salts mainly transude through the capsule, the specific urinary constituents (urea, uric acid, etc.) and the remainder of the salts being secreted by the epithelium of the tubules, and chiefly of the convoluted tubules. As these are only secreted in the soluble condition, it follows that part of the water also must be secreted by the tubular epithelium, and after the administration of some diuretics these observers believe that the water secreted may even exceed that coming through the glomerulus. Quite recently the theory of Ludwig, with a slight modification, has again been brought to the front. Sobieranski (1895), from experimental observations, concludes that the constituents of the blood plasma, with the exception of albumin, transude through the glomerulus, but reabsorption results from the activity of the epithelial cells, that is, it is a true secretory process. Still more recently another factor has been made prominent. Hellin and Spiro (1897) state that their experiments suggest, but do not certainly prove, that the epithelium (tubular) is not necessary for diuresis. They believe that the capacity of the capsular space has a special significance, and its width corresponds to the amount of water excreted and may even regulate it."

* *

A skeleton was found in the course of some scientific explorations last winter in Egypt which has shown, upon examination in London, every osteotic evidence of rheumatoid arthritis, and the case is of striking interest in illustrating pathological conditions as far back as 3,700 years B. C. to which time there is abundant proof that this skeleton belonged. Dr. May, who made the pathological examination of the bones, says:

"In some bones showing changes of osteo-arthritis brought before the Pathological Society by Mr. F. S. Eve, and dating from the XVIII Dynasty, that is, about 1300 B. C., changes due to periostitis were associated, but in the subject of the present note no such changes were observable.

It is interesting to find evidences of rheumatoid arthritis existing so long ago as 3,700 years B. C., and more especially in a country the climate of which offers one of the best therapeutic factors which we possess for the treatment of this peculiar disease. It is possible that the person affected in this case may have been merely a visitor to Egypt. Intercourse between the Egyptians and Asiatics or Europeans was extremely common at this period of Egyptian history, and then, as now, persons frequently visited Egypt for the benefit of their health. But it is more probable, both from the characteristics of the skeleton itself, and from its having been found in an Egyptian cemetery, that the subject was an Egyptian. One has merely to observe how the modern Egyptians perpetuate the mode of living of their ancestors in being insufficiently clad, and constantly exposing themselves to varying changes of temperature and moisture, to realise how a disease whose chief causal factors are damp and cold may have originated.

As far as I have been able to find in medical works the above subject is more than 2,700 years earlier than any previously recorded case."

Book Reviews.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS, with especial reference to the application of Remedial Measures to Disease and their Employment upon a Rational Basis. By **HOBART AMORY HARE** M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, etc. With special chapters by Drs. George E. de Schweinitz, Edward Martin and Barton C. Hirst. Sixth edition, thoroughly revised and largely rewritten. In one octavo volume of 756 pages. Cloth, \$3.75; leather, \$4.75. Lea Brothers & Co., Publishers, Philadelphia and New York, 1897.

This is the most useful sort of a book for a student of clinical medicine or for a practicing physician to have at his elbow.

It is a study of the diagnosis of disease from the standpoint of the symptoms, the very standpoint from which the doctor must view nearly every case of sickness presented to him for study. From the symptoms and signs he always works forward or upward to a diagnosis of his case and must always so work, and the wonder is that so few thorough books have ever been written on this plan. Dr. Hare is a most energetic student; he has compiled and utilized the studies and writings of others in a commendable way and has produced a superior work; one that will be most useful in the hands of the profession. It is not perfect, nor could it be for long. The current rapid progress of the development of internal medicine makes frequent revision necessary.

Some inaccuracies of the first edition have been eliminated from this one, and many additions and emendations have been made. New illustrations have been introduced; tables and various useful hints added; and most of the few appearances of a rather hastily gotten together book have disappeared. Altogether there is very little but praise to be said of this edition. The errors, and every book of the size and character of this contains some errors, are in the main of minor character and degree, and some that would

be apparent to particular readers the author might contend were not errors at all.

We note that the classical description of the typhoid tongue is insisted upon in the text, and that it is even dignified by a colored plate that purports to depict this sign exactly. But the sign is of doubtful value since in a large majority of cases of typhoid fever no such appearance is ever discovered, and the tongue is not different from that of several other febrile diseases or of even some cases of biliousness.

We have looked in vain for a hint of the diagnostic significance of priapism in spinal cord disease, and for the meaning of a constant sensation of coldness of the hands and feet in diseases of the nervous system.

The double index (or two indices) in the first edition, one of symptoms and the other of diseases, has disappeared and in its place we have one index embodying all references. This is a much better arrangement and makes the book a well-nigh complete one.

Dr. Hare and the publishers are to be commended for this large effort in behalf of the easier learning and better understanding of clinical medicine on the part of the profession, as they are to be congratulated on their success.

N. B.

THE MEDICAL NEWS VISITING LIST. 1898. Philadelphia: Lea Brothers & Co.

This popular assistant to the busy practitioner is again before us. It not only contains some concise information, but is a condensed plan of every day account-keeping.

Review of Clinical Literature.

Being a List of the Leading Clinical Articles of the Past Month:

Arranged Alphabetically by Title, Giving Author and Reference
MEDICINE.

- Diabetes Mellitus, A Contribution to the Pathogenesis and Etiology of—
H. Stern, N. Y.—*N. Y. Med. Rec.*, Dec. 18.
- Diabetes Mellitus, The Frequency and Etiology of, with Clinical and
Pathological Notes—T. B. Fletcher, Baltimore—*N. Y. Med. Jour.*,
Dec. 4.
- Diphtheria, The Influence of Cow's Milk in the Spread of—W. T. How-
ard, Cleveland, O.—*Am. Jour. Med. Sci.*, Dec.
- Insanity, A Preliminary Report upon the Bacteriological Examination
of the Cortex and Cerebro-spinal Fluid in 47 Cases of—H. A. Tom-
linson, St. Peter, Minn.—*Am. Jour. Ins.*, Oct.
- Nephritis, Clinical History of—H. A. Fairbairn, Brooklyn—*Brooklyn
Med. Jour.*, Dec.
- Œsophagus, On Tuberculosis of the, with the Report of a Case of Un-
usual Infection—C. Cone, Baltimore—*Bul. Johns Hopkins Hosp.*,
Nov.
- Progressive Dementia, Preliminary Report, Clinical and Pathological,
of a Case of—C. K. Mills and M. A. Schively—*Am. Jour. Ins.*,
Oct.
- Röntgen Rays in Thoracic Disease—F. H. Williams, Boston—*Am. Jour.
Med. Sci.*, Dec.
- Scurvy, A Report of 42 Cases, etc.—F. A. McGrew, Crete, Nebr.—
Medicine, Dec.
- Three Thousand Cases of Melancholia, An Analysis of—S. W. Mitchell,
Phila.—*Jour. Nerv. & Ment. Dis.*, Dec.

A few hints touching the nurses care of the typhoid patient, while not new, will bear repetition or a re-casting. We extract them from a recent issue of the *Hospital*.

Many nurses say that "typhoids are uninteresting patients but interesting cases." The comatose apathy and depression accompanying this disease necessarily make the sick-room very quiet and free from excitement. But the good nurse sees in a typhoid case that opportunity to be eyes, hands, and second self to her patient, which is most "interesting."

In early stages the nurse must remember that her patient has a long, feverish time to pass through, and that every effort must be made to keep his strength in "trim" to fight against the exhaustion of the disease. Lung and throat complications may easily ensue in a mild case through chill after sponging or through insufficient clothing of the patient. The bed, too, needs scrupulously guarding from draught. By change of position the nurse may minimize the risk of lung trouble, for continued lying on the back intensifies the tendency to bronchitis and pneumonia. Many nurses think lung trouble is caused by remaining too long in the same position, but this is erroneous, since position is another factor added to a tendency and is not in itself a cause.

The patient should be sponged night and morning with tepid water. The unpleasant odor frequently arising from the body of a typhoid patient may be counteracted in prosperous households by the addition of a small quantity of eau de Cologne to the bath water. To minimize the risk of chill and refresh the feverish skin it is well to give the patient a gentle "rub down" after the sponging, especially over the chest and back, with hands saturated with Cologne water. Methylated spirit may be used where the expense of Cologne might be a consideration. Children's hair should be cut short from the first day of typhoid. Women patients naturally hesitate to sacrifice their hair. But this must be done in bad cases, and often where delirium and high fever supervene the head must be shaved to allow of the necessary evaporating lotions, ice-bags, or cold compresses to the head. Cutting the hair off is the best step in all severe cases of typhoid, as it will otherwise fall out and grow thin and scanty.

The condition of the mouth and throat is most important, since the hygienic condition of these materially affects the feeding of the patient. An admirable mouth wash consists of glycerine, lemon juice, rose water, and chlorate of potash solution in equal proportions. Boro-glyceride diluted with water may be used for the tongue and throat, applied with a soft brush or feather.

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"Belin (*Munch. Med. Woch.*, Oct. 19, 1897) reports upon the cases recently treated in Koht's clinic in Strassburg. A vigorous local treatment was employed previous to the introduction of the serum treatment, but not since. Five hundred and twenty-nine cases of diphtheria were treated in 1896, and of these only 56, or 10.6 per cent died. There were among them 286 severe or moderately severe cases, and the mortality among these was 19.6 per cent. (1) Of the 243 slight cases none died. (2) Of 98 severe or moderately severe cases 6 died; 3,000 units of Behring's serum were generally injected in these cases. (3) Of 10 severe septic cases 6 died, but 4 of these were moribund on admission. (4) In 181 cases the larynx was involved, but in 29 of these the disease was relatively mild; 42 recovered without tracheotomy, whereas 132 were tracheotomised. In 99 cases tracheotomy had to be done immediately after admission. Of those not operated upon none died, and among the tracheotomised 44, or 33 per cent., died. The results obtained after tracheotomy showed a very considerable improvement upon past experience; the greatest number of these cases belonged to the severe or severest form of diphtheria. Owing to overcrowding broncho-pneumonia claimed some victims among the tracheotomised. A distinct diminution in the mortality was observed among children admitted on the fourth and fifth days of the disease and later. In 2 fatal cases clotting was found in the heart; the author has observed 4 such cases in all since the introduction of the serum treatment, but never before. The effect of the serum treatment was undoubtedly favorable. The beneficial action on the local lesion was obvious. In diphtheritic croup the signs of stenosis disappeared much more rapidly than formerly. The general condition of the patient quickly improved, but the good effect on the pulse and temperature was not so obvious. The serum treatment only failed in cases of the severest sepsis, but the author is convinced that even here recovery is not impossible if the treatment be commenced early. Perhaps the doses given were not always large enough. No unfavorable results could be distinctly attributed to the serum treatment except the rash. Some careful observations were made upon the appearance of albu-

men in the urine and upon an increase in its amount; the idea of the serum exercising some effect on the kidney could not be definitely excluded. A skin eruption was seen in 2.8 per cent. of the cases. In 6 cases it resembled scarlet fever, in 5 urticaria, in 1 measles, and in 3 a polymorphic erythema. The presence of a scarlet fever epidemic made the diagnosis between a scarlet fever and a serum rash at times difficult. Post-diphtheritic paralysis would appear to be more frequent since the serum treatment was introduced; here it was present in 20 out of 529 cases. Relapse is also more frequent, it was noted on 4 occasions. The above evidence distinctly in favor of the serum treatment is the more important as the first experience of the treatment in this clinic did not speak much in its support."—*Brit. Med. Jour.*, Dec. 11.

SURGERY.

- Extra-dural Abscesses; Operations and Recoveries, Three Cases of—J. V. Green, Boston—*Bos. Med. & Surg. Jour.*, Nov. 25.
- Femur, Van Arsdale's Triangular Splint in Cases of Fracture of the Shaft of the—A. E. Gallant, N. Y.—*Jour. Am. Med. Ass'n.*, Dec. 18.
- Goitre. Remarks on the Surgical Treatment of, etc.—E. Martin, Phila. *Therap. Gaz.*, Dec.
- Lower Jaw, Fractures of the, and their Treatment—P. W. Moriarty, Boston—*Bos. Med. & Surg. Jour.*, Nov. 18.
- Pericarditis, The Surgical Treatment of Suppuration—J. B. Roberts, Phila.—*Am. Jour. Med. Sci.*, Dec.
- Surgical Treatment of Congenital Ano-rectal Imperforation, etc. (Cont'd)—R. Matas, New Orleans—*Am. Jour. Obs.*, Dec.
- Traumatic Injury of the Pneumogastric, Hypoglossal and Sympathetic Nerves, Notes on a Case of—W. Hirsch—*N. Y. Med. Jour.*, Dec. 11.

Dr. P. W. Moriarty, of Boston, in a paper on *Fractures of the Lower Jaw and their Treatment*, strongly advocates that such cases should be placed in the care of a competent dentist, rather than attempted by the medical practitioner. He says (*Bos. Med. and Surg. Jour.*, Nov. 18).

"In my opinion, the dentist and not the physician or surgeon is the proper person to treat all fractures of the jaw. Dentists should emphasize this fact, and impress it upon the public and the physicians. That the hospitals are

recognizing this fact is proven by the number of cases we have had here during the past few years.

In the early days various methods of treatment were resorted to. The teeth were not considered as essential to the health, comfort and good looks of the patient as now. It did not matter if the contour of the face was marred by the displacement of the fragments. If the parts grew together fairly well it was of little consequence if the articulation was good, bad or indifferent. If one or more teeth were prominent and made the displacement noticeable, the forceps in the hands of the surgeon soon remedied that, and the patient was thankful to get through alive.

The physician treats a fracture of the jaw by applying a four-tailed bandage, or by wiring the parts together. The dentist treats one by means of a dental splint nicely constructed and properly applied, which is far superior to bandaging or wiring. Physicians seem to be unaware that the comfort and interests of their patients would be better served by calling in the services of a dentist.

The application of a correctly made splint does not interfere with the functions of the jaw, and in a great many cases the patient can masticate with comfort, being able to open and close the mouth. This they cannot do when bandages are used.

The best treatment requires the readjustment of the fractured parts, and fixation, and that the fixation of the bone shall not interfere with its functions, nor with the required dressing of an associated wound."

OBSTETRICS.

Abdominal Section, A Clinical Study of Two Unique Cases of—A. M. Fullerton, Phila., Pa.—*Am. Gyn. & Obs. Jour.*, Dec.

Lithopedion, A Rare Case of—J. G. Clark, Baltimore—*Bul. Johns Hopkins Hosp.*, Nov.

Dr. W. W. Potter, of Buffalo, N. Y., in concluding a paper read before the late meeting of the *American Association of Obstetricians and Gynecologists*, entitled *Principles of Treatment in Puerperal Eclampsia*, sets forth the following definite conclusions thereon:

1. Though the pathogenesis of eclampsia is unsettled,

it belongs solely to the pregnant or puerperal state. It is not apoplectic, epileptic, or hysterical in character.

2. It depends upon toxemia due to over-production of toxins and under-elimination by the emunctories.

3. These toxins probably have their origin in the ingesta, in intestinal putrefaction, in fetal metabolism—one or all—and there is coexisting sluggishness, impairment, or suspension of elimination.

4. When the prodromes of eclampsia appear the kidney should be interrogated as to its functions and all symptoms carefully watched.

5. Treatment is (a) preventive and (b) curative. Preventive treatment is medicinal and hygienic; curative treatment is medicinal and obstetric.

6. Milk diet and distilled water should be given in the pre-eclamptic state to dilute the poison, hasten its elimination, and nourish the patient.

7. Blood-letting should only be employed in plethora or cyanosis. It is liable to cause anemia if persisted in or repeated, whereas red blood corpuscles must be conserved, not wasted. Glonoin diminishes vasomotor spasm, hence may be given freely in appropriate cases. Veratrum viride is a cardiac depressant and a dangerous remedy if pushed to an extent that will control convulsions.

8. Eclampsia is the expression of a further maternal intolerance of the fetus; hence, as a primal measure, the uterus should be speedily emptied of its contents.

9. Medicinal treatment alone is delusive, and when relied upon exclusively is fraught with danger both maternal and fetal, whereas in the prompt induction of labor is found a rational application of science to a desperate condition.

10. Finally, it furnishes, in the present state of our knowledge, the only basis of expectation for a diminished mortality in a toxemic disease of high death rate."

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NO. 5.

A CASE OF FATAL ACUTE DILATATION OF THE STOMACH FOLLOWING CHOLECYSTOTOMY.

By Christian Fenger, M. D., with the collaboration of William Hessert, M. D., Chicago.

Mrs. M. Referred by Dr. Webster. of Evanston.

Personal History. Age 38. Married; American; born in Texas; lived in Illinois last nine years; average weight 145 pounds. Began to menstruate at 14, and the function was regular and not painful for three years. At seventeen her menses began to be more profuse, lasting seven days, and accompanied by pain, more severe on the right side. Married at 21. First childbirth at 22. Labor difficult and protracted—forceps. Menses after that less profuse and painful. Second child six years later. Labor easy and normal. Miscarriage some time after. For last six months menses are more scanty, lasting seven to nine days. Was under gynecological treatment. Children are living and healthy.

Family History. Mother died of puerperal fever at 24; father of cholera at 42; maternal grandmother of intestinal obstruction; maternal grandfather of cholera or dysentery. Paternal grandmother died of pneumonia; paternal grandfather of gout at 82. Sisters, none. Brothers, one died in infancy of pneumonia; two living—one is healthy, the other suffers with renal calculi. Maternal aunts and uncles living and healthy. Paternal aunts none; paternal uncle died at 63 years of carcinoma of the liver.

Previous Illnesses. During early childhood had measles, whooping cough, chicken pox and pleurisy. Facial erysipelas at 17. Curettement three years ago, following miscarriage.

Present Illness. After a miscarriage at sixth week in 1894, a curettement was performed for excessive flowing. In the second night after the operation she was awakened by pain in epigastrium and left scapula. No pain in region of gall-bladder. Belched gas; pain constant and lancinating. The pain in region of scapula was not constant; attack lasted from 11 P. M. to 8 A. M. Was so narcotized with morphine that she does not know whether attack subsided gradually or suddenly. Since this time, up to the present, she has suffered with flatulency after eating, not benefited by treatment.

In February, 1895, while dressing for dinner she felt a sensation of weight and distention in region of gall bladder, gradually extending into the epigastrium; was taken to bed in half an hour, the pain in epigastrium having greatly increased. Pain in region of gall-bladder was either absent or so slight, as compared with the epigastric pains, that it was not observed during latter part of attack. No radiation into scapula. Morphine was administered, after which she went to sleep; awakened without pain and felt as well as before the attack. The attack had lasted four hours.

In April, 1895, she had three attacks in one week. Between the second and third attacks she felt a constant heaviness and aching in region of gall-bladder. After the third attack she was so weakened and so nauseated by morphine that she was confined to the house for four weeks and recovered her strength very slowly. These attacks were all severe, coming on without special cause and lasting four or five hours, (she was dieting at the time.) The pain was first in the region of the gall-bladder, travelling into epigastrium where it was most severe, and from there radiating into right scapular region. After the second attack she noticed that her urine was very dark and high-colored, becoming lighter again in two or three days. Stools were of normal color. The physician at the time said she was sallow but not jaundiced. In September, 1895, she had a similar attack,

lasting two hours, which left suddenly without morphine; no physician. December, 1895, two slight attacks; cereal diet most of the time up to the present. Gained twenty pounds again in six months. March, 1896, slight attack. Threatened with attack subsequently, but on expelling gas from the stomach she felt easier. During winter, '96-'97 her weight was 143 pounds; in April, 1897, 138 pounds; gradual loss of weight since.

April 24, 1897. Two attacks in one week and between the attacks was said to have had influenza; temperature $103\frac{1}{2}$ F., only lasting a few hours, and diarrhoea lasting two days; color of stools dark. Urine was normal except for increased uric acid. First attack lasted only a short time.

Early in September, 1897, had a severe attack which was relieved by morphine. Since then she cannot take ordinary food, owing to distress in gastric and hepatic region, flatulency or pain in scapula. Weight 128 pounds, progressive loss of strength.

September 20, '97, an attack of the usual type, left her very weak and with gaseous distention of stomach after meals. Confined to house three weeks.

October 10, '97. Three attacks in the week following. During the first one she had great pain in the region of gall-bladder, which shifted on change of position.

October 13, '97. Severe attack lasting three days, pain radiating around to right side from region of gall-bladder.

After all the attacks before mentioned there was no pain nor tenderness in the region of the gall-bladder. No tumor ever observed. No icterus at any time, nor clay-colored stools. No stones ever found in stools.

Physical Examination. Skin dark and dry but not jaundiced.

Heart and lungs negative.

Abdomen normally distended, not tender on palpation anywhere. Liver not enlarged, palpable in region of gall-bladder, the latter not being palpable. Spleen negative.

Urine—Sp-gr. 1015; acid; no albumen nor sugar; bile—slightest trace. Microscopically—no epithelia, pus, nor red corpuscles. Few bacteria. Few crystals of ammonium phosphate.

Operation. November 2, 1897.

Ether narcosis by Dr. Palmer. Operative assistants, Drs. Waters and Buford. Dr. Randall, of Galveston, Tex., was present.

Incision—longitudinal in outer border of sheath of rectus from one inch above border of false ribs to below the umbilicus. Peritoneum sutured to skin. Liver border extends one and one-half to two inches below ribs. Gall-bladder small, whitish, thickened. No stone felt. No adhesions to gall-bladder nor to common duct; slight adhesions to cystic duct. Gall-bladder apparently rather empty, or contains only about a table-spoon of fluid, which can not be pressed down through common duct, and does not get beyond middle of cystic duct, which is S-shaped, and at the point of obstruction a small stone, the size of a number six shot is felt, being apparently imbedded in the tissues about the wall of duct, as it was immovable.

Exploration of common duct revealed no stones, no enlarged gland. No enlargement of pancreas.

Diagnosis. Obliteration of cystic duct; small stone in wall of cystic duct. Probable retention and suppuration from stones in the gall-bladder.

The small stone was removed by incision of the cystic duct, the lumen of which was not opened; wound closed with two fine silk sutures.

I chose to do a cholecystotomy in preference to cholecystectomy, because the patient was weak and some of her symptoms, pain, loss of strength and weight, would seem to be due to some undiscovered cause, as I could not account for them by the slight effects of inflammation about the gall-bladder—viz. no adhesions, no dilatation. I suspected some hidden disease in some other organ.

As the gall bladder could easily be brought to the skin surface I performed a cholecystotomy, as follows:

- I. Two loops of silk inserted into gall bladder.
- II. Protective packing of gauze around it.
- III. Incision with scalpel brought out a fluid, not bile—but yellowish mucus, containing bilirubin gravel—about one teaspoonful in amount.
- IV. Gauze sponge passed into gall bladder came out

with three small, flat, irregular, yellow concretions adhering to it. Exploration with finger revealed no more stones. Gall bladder narrow, just admits index finger. Wall thick; fibrous; concentric atrophy beginning.

- V. Gall bladder sutured to skin. Drainage tube inserted in gall bladder. Another tube and gauze drain down to the wound in cystic duct.

- VI. Suture of abdominal wound.

Duration of operation one and a half hours; pulse 130; weak. After operation morphine one quarter grain with atropine injected and repeated in half an hour, as the first injection did not relieve the pain. Second injection followed by only slight relief; vomited several times, mostly bile. At 10 P. M. constant pain in lower end of wound on right side, (as was proven by autopsy to be due to hæmorrhage from stitch canal into peritoneal cavity). Seems anxious to try to do without morphine for fear of vomiting. Occasional hiccough causes intense pain in wound. Temperature 98.6, pulse 90, fair strength. No discharge through dressing, no restlessness, vomited bile.

Nov. 3. Has had a bad day, temperature and pulse rising, the latter becoming quite weak. Constant nausea and some vomiting. Tongue moist; feeding by mouth almost entirely stopped and nutrient enemata given. Morphine caused nausea, so chloral administered per rectum with some rest and sleep following. Dressed wound at midnight and found no bile in dressings nor in tube in gall-bladder, nor in the one draining the cystic duct.

Nov. 4. Has been somewhat better—pulse stronger and slower—less nausea and no vomiting since noon. Much pain in abdomen. Attempts at vomiting occasioned pain in wound. Champagne per os. Nutrient enemata every two or three hours. Tongue moist. Pulse 120-130, but stronger. Temperature $101\frac{1}{2}$. Has begun to menstruate and has pain in pelvis. Has had strychnine, chloral and digitalis.

Nov. 5. 10 A. M. Has had little sleep, but does not complain of more pain. Since midnight has drank a bottle of iced lithia water with no distress in stomach. Is distressed by flatus and a desire to expel the enema. Says that

abdomen feels as if distended by gases, but no flatus passed; tongue moist. Temperature 99.3; pulse 130, fairly strong. 8 P. M., feeling fairly comfortable. A soap enema at 11 A. M. was followed by a large passage and much flatus, giving relief. Pulse 120, strong and full. Temp. 100°. Some hiccough—causing considerable pain in wound. No vomiting—no restlessness.

Nov. 6. 9 P. M. Had some sleep during the night at intervals. Chloral by rectum at 1 A. M. Feels stronger. Pulse 104 and of good strength. Temp. 99½. Still has hiccough which causes severe pain in side. At noon felt some nausea following a drink of beef tea—stomach began to feel as if distended with gas and at 3 P. M. vomited what had been taken, viz., beef tea, koumyss, etc. Vomited several times after that; some bile in vomitus. Enema of water, glycerin and turpentine, after which she felt some better. General appearance much better towards evening. Enema followed by bowel movement.

Nov. 7. Had a little rest during the night, but vomited some. This morning is much better than any day since the operation, so that her brother, a physician, took train for his distant home. Pulse 92, full and strong; temp. 99.3. General expression better; no vomiting since early morning. Stomach feels better—nausea at intervals only; occasional hiccough. Dressed wound at 10:30 A. M., no bile in dressings; loosened tube extending down to cystic duct. About the middle of the afternoon she began to complain of pain in the abdomen, *about two inches to the left and one or two inches below umbilicus*. The pain increased in intensity and at the same time the vomiting returned, consisting of greenish fluid, coming up without any effort, viz., "mouth filling" or "projectile" in character. Constant nausea and occasional hiccough. Pulse became more rapid and smaller; at 10 P. M. pulse 120 and temp. 100½. The bright expression of the morning is gone—now features are haggard. At 10 P. M. reopened dressings. Two inches to left and one-half inch below umbilicus, I thought I felt a resistance. No general tympany, but in left epigastric region and extending two inches below umbilicus a soft "cushion-like" protuberance was felt and seen. The lower third of abdomen *above*

symphysis yet concave. No swelling nor pain in right half of abdomen. I thought that a sponge was left in the peritoneal cavity.

Nov. 8. 3 A. M. Pulse 115; temp. 99. Vomiting. I considered (1) peritonitis and possible reopening of abdomen to remove a possible sponge or drain! (2) Acute dilatation of stomach. During the night patient slept for a few minutes at a time only, but did not feel much acute pain. Tenderness in left side. At 10 A. M.—consultation with Dr. Favill. Pulse 120; temp. 100.2. Vomiting. Tympanites increased—whole left half of abdomen convex and also right suprapubic region. I felt now no resistance to left of navel. The tympanitic percussion extends high up over lower ribs. For the first time about one teaspoonful of bile was found in the dressings. I resolved that before reopening wound or cutting down independently of old wound in left side of abdomen [with a view of (1) overcoming an intestinal obstruction or (2) removing sponge] to (1) wash out the stomach and (2) inject salt solution. At 11 A. M. stomach pump introduced—siphon—brought out one and one-half quarts of green fluid. *All the tympany disappeared*—upper half of abdomen was concave above umbilicus, and slightly concave below. No resistance, no hardness felt now—no tenderness, nor pain. Patient felt much relieved immediately and the pulse became stronger. Infusion of normal saline solution under both mammæ with an aspirator needle and fountain syringe.

Later on enema and voluntary discharge of small amount of flatus.

The diagnosis of acute dilatation of stomach almost certain, as the tympany and pain disappeared and the vomiting ceased after use of stomach tube.

Is the dilatation due to

1. (Edema and paralysis of stomach wall, or
2. Bending or kinking of pylorus from an overfilled, heavy stomach, or
3. Stenosis of duodenum from gauze packing, pulling up of gall bladder or formation of bands of adhesions (as after an ovariectomy an intestinal loop adhering to stump)?

In the evening patient was weaker and more exhausted than in the morning.

Nov. 10. No vomiting—no bile in dressings—no pain—no decubitus; some hiccough. Pulse 120, temp. 99. General condition worse. Abdomen on left side protuberant and tympanitic again. Convex above umbilicus and flat below. Tympanitic percussion from fifth rib anteriorly to one inch below umbilicus. Stomach tube passed and forty-four ounces of green fluid evacuated; lavage with warm water brings out flocculi of green, amorphous matter. After the introduction of the tube, five minutes manipulation was required before the fluid contents began to flow out. After emptying the stomach the previously protruding and tympanitic area collapsed and left the abdomen flat again. No tenderness nor resistance anywhere. After the lavage twenty ounces of salt solution was injected into the loose cellular tissue beneath mammæ. After this there was marked improvement in the general condition. Pulse became slower and stronger. The patient felt relieved and expressed herself as "so much better." Later in the day a high rectal enema of a solution of salts and glycerine was given, followed by much discharge of gas and large bowel movement. No nourishment by stomach; rectal feeding with brandy and milk. At 5 P. M. injected salt solution which did not have the beneficial effect on the pulse as previously. Strychnine $\frac{1}{8}$ grain every three hours, began at 10 P. M. No bile in dressings. Midnight—Patient has been very restless during the evening and is constantly wanting something done for her. Is becoming more and more restless; no change of position gives relief. Pulse 140 and weak. Expression of face haggard and worn, eyes sunken and bordered dark.

Nov. 11. 2 A. M. Becoming worse—more restless; pulse 154 and weak. Hypodermics of digitalis m. x every three hours. 4 A. M. slept for a half hour. Pulse 140. Dressed wound to relieve odor. No tympanites. 10 A. M. Feeling somewhat stronger. Pulse 130, quality somewhat better; temp. 101.4. No pain; no tympany; no vomiting. Slept somewhat during forenoon. Hot olive oil rubbed over entire body. Elixir alimentaire, one teaspoonful, given

by stomach every hour. Digitalis and strychnine continued. 2 P. M. Pulse 130; temp. 101; is quiet. 8 P. M. Continues about the same. Pulse 130; temperature 101.4. No restlessness; is very weak but does not feel as exhausted as last night. No tympanites. Stomach not washed out to-day.

Nov. 12. (Morning) Patient is gradually failing; pulse more rapid and very weak, extremities becoming cold. Com- plains of nothing except extreme weakness. *No nausea nor vomiting.* Elixir alimentaire and malted milk given every hour or two by stomach. Remains conscious. A little tym- panites has developed.

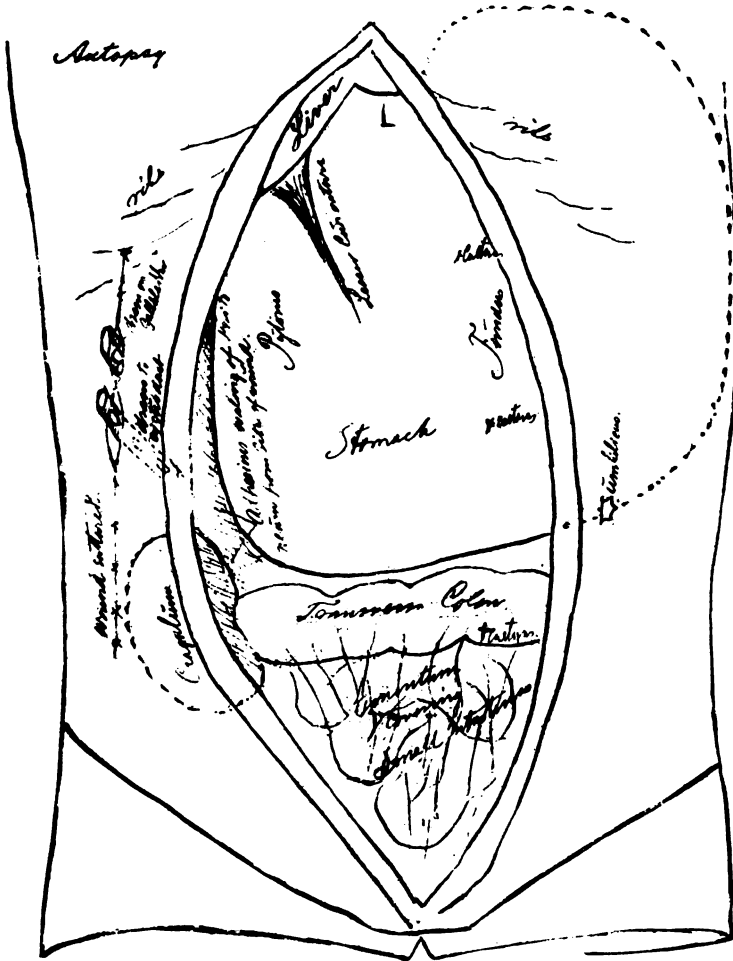
Towards evening became unconscious and quietly passed away at 7:30 P. M.

The following is revealed by an examination of the stomach contents of November 10: Amount—forty-four ounces. Color, grass green. Consistency, thin fluid, stringy on dripping. Sediment after twenty-four hours standing, consisted of a few small flocculi, like curdled milk, of a grass-green color. Reaction—acid. Specific gravity, 1007; filtrate, 1004. Bile—large amount. Albumen—large amount. Sugar none. Microscopically—the flocculi were amorphous, homo- geneous, greenish masses. No red corpuscles, few leucocy- tes, many fat globules—few columnar epithelia. No bac- teria nor fungi.

Autopsy. Three hours after death; body not yet cold, no rigor mortis; eyes sunken; rubber drain in gall bladder; tube and drain to cystic duct. No redness nor swelling around stitches; sutures in situ. Abdomen opened from sternum to pubes. Panniculus adiposus one and one-half cm. thick—adipose tissue of normal yellow color. (No oedema or atrophy.) On careful opening of peritoneal cavity, no fluid, no adhesions, no fibrinous matter. The anterior wall of stomach fills the entire space from xiphoid process to umbilicus and from right border of right rectus muscle 20 cm. to the left and from umbilicus to fifth rib (21 cm.). Although not distended ad maximum, the stomach presents the appearance of a fat arm in flexion; the colossal upper arm being formed by the fundus and descending cardiac por- tion of the stomach, and the smaller forearm being formed

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by the pyloric (ascending) portion. The descending and ascending "arms" are in contact, forming almost one line. The surface of this enormous sac is smooth, greyish-white—not bluish (Riedel)—color normal, perhaps somewhat paler.



Surface smooth and shining, if anything somewhat dry. Cultures taken on blood serum, agar and glycerin agar from the left side of stomach and abdominal wall and from the transverse colon and omentum.

The fundus fills out the whole left half of abdomen above

umbilicus up to the fifth rib. Below the greater curvature lies the transverse colon, situated below the umbilicus transversely, of normal, greyish-white color. Below the colon the omentum (of normal appearance) covers the intestines, not yet revealed. On the right border of the ascending pyloric half of stomach is an uninterrupted layer of whitish yellow adhesive exudate, gelatinous or fibrinous, with a perfectly dry surface, situated between stomach and anterior wall of abdomen. The exudate extends below stomach between hepatic flexure of colon and abdominal wall, and below transverse colon between omentum and abdominal wall down to one inch below the colon and to one inch below the lower end of operation wound. In this portion of the omentum is felt a swelling the size of a hen's egg, semi-fluctuating and by loosening and stripping up the omentum from the abdominal wall, one ounce of dark liquid blood flowed out and ran down over the omentum into the pelvis. Cultures taken from the blood on agar and blood serum (staphylococci). The blood came from the egg-shaped swelling that is now found to be a cavity 6 cm. by 5 cm. It is lined with fresh, dark, soft coagula adherent to omentum and anterior abdominal wall in region of lower inch of operation wound. (Bleeding from a stitch through branch of superior epigastric artery—the hæmorrhage walled off by abdominal wall and omentum). This corresponds to the region of pain felt by patient immediately after operation and on first and second days following it in region of lower end of wound (pain disappeared on the third day).

In loosening the adhesions (fibrinous exudate) above the transverse colon between the right border of pyloric half of stomach (ascending branch of "arm") the walled-off cavity for drain (tube and gauze) down to cystic duct is opened. From this point a teaspoonful of pus exudes from around tube and gauze. Cultures made from the pus (staphylococcus aureus.)

[NOTE. Pus always wells up when the gauze drains are removed e. g., from a gauze drain in suprapubic cystotomy. Here some pus had exuded from around lower drain and gall bladder drain during dressing of wound, the same as when dressings were changed—but in small quantity—not more than around the drains in all gall stone operations.]

Examination of abdomen below transverse colon was now made by lifting up the omentum from the small pelvis. On the small intestines filling lesser pelvis some blood had run down when the sac of blood described above was opened into (cultures). Small intestines empty and contracted—color and peritoneal covering normal. At the floor of pelvis there was no fluid—no exudate around uterus nor adnexa, the color of which was normal. A small fibroid in anterior aspect of cervix, size of hazelnut. Bladder half full of urine—normal. The sigmoid flexure and rectum were distended by gas—the peritoneal covering normal, only the color was somewhat more red than that of the transverse colon. (The distention and injection due to the nutritive enemata.)

The fibrinous adhesions between stomach and gall bladder were loosened; the fundus of the gall bladder with its opening (cholecystotomy) was adherent all around and walled off from the peritoneal cavity. All the drains and sutures now removed and the operation wound reopened. The wall of stomach was incised and some gas, together with the green fluid noted above, escaped. Palpation of interior of stomach showed it to reach up to the fourth and fifth ribs. Digital examination of the pylorus and duodenum, shows the former of sufficient size to admit three fingers, as was also the latter for two or three inches of its course. Below this dilated portion, where duodenum lay over the vertebral column, it was normal or so contracted as to admit one finger only.

Mucous membrane of stomach smooth, pale, of normal color. The wall of stomach was not thinner but rather thicker than one would expect of a stomach so enormously dilated. Examination of bile ducts—no stones felt in or around gall bladder nor in cystic duct; no bile in gall bladder, nor around wound in cystic duct, no stone, nor anything abnormal was felt or seen. The lesser omental sac was opened, after lifting up the stomach, and found to be empty and the peritoneum smooth and shining. Pancreas of normal appearance.

Liver of normal size, shape and color, as were also the kidneys.

After lifting up the distended fundus the spleen was found of normal aspect throughout.

Post mortem was restricted to the abdomen by request of the family.

Resumé of autopsy—No peritonitis, no sponge left behind, peritoneal cavity safely walled off from field of operation, gall bladder and tract of drain down to cystic duct.

Extravasation of blood (hæmatoma) size of hen's egg containing two or three ounces of blood partly coagulated, partly liquid, in region of lower end of operation wound, between it and the omentum and walled off from the drainage tract down to cystic duct and from general peritoneal cavity.

Enormous dilatation of stomach and upper portion of duodenum.

Contraction of small intestines and colon ascendens, transversum and descendens. Dilatation of sigmoid flexure and rectum.

Microscopic Examination—Stomach. The cylindrical epithelial cells of mucosa surface are normal in shape, size and structure. The glandular cells of peptic glands also perfect and the central and parietal cells can readily be distinguished from each other.

Pancreas normal structure.

Kidneys—cloudy swelling of epithelial cells in tubuli contorti.

Liver—cells slightly cloudy and granular. Not a trace of fat in the liver cells.

Spleen normal.

Bacteriologic Examination. (By Dr. E. J. Brougham at the laboratory of the Passavant Hospital of Chicago.)

Stomach contents (green fluid) contains staphylococcus albus.

Peritoneal cavity, from different points, sterile.

Hæmatoma from bleeding stitch hole—staphylococcus aureus (probably contaminated during the autopsy).

Pus along gauze drain—staphylococcus aureus.

Henry Wald Bettman (*Gaillards Medical Journal*, August, 1897, page 78) reports an interesting case of acute dilatation of the stomach. The author considers that (1) there is such a condition as acute dilatation of the stomach; (2) that the

disease is fairly uniform in its onset, course and tendency to a rapid fatal termination; (3) treatment must be prompt and active and some lives can be saved by early diagnosis and energetic treatment.

His case was a female; age 17; Russian; well nourished. Admitted to hospital October 23, 1895. Sick two weeks prior to admission with headache, anorexia, fever, general malaise, vomiting. Diagnosed typhoid fever, as she had enlarged spleen, temperature 101-103, °F., diarrhœa, roseolæ. Vomited much and had to be catheterized. Diagnosis—typhoid and acute gastritis. Up to November 7, progress uneventful, save vomiting and delirium. Abdominal tenderness; fever gradually abated.

November 7 to 13—Convalescing, hungry, took nourishment well, (ice cream, soup, soft-boiled eggs.)

November 13—Vomited once but felt well otherwise.

November 14—Severe abdominal pain, nervous, delirious, vomited eight times; food stopped; abdomen enlarged and tender.

November 15—Restless till 10:30 p. m. Sudden collapse, temperature 96.5, was kept alive next day with the greatest difficulty. Pulseless, cold, vomited large amounts green, thin fluid. Cracked ice with a few drops of chloroform given. Sensorium dull. Bowels moved spontaneously, brown and watery. 700 c. c. urine in twenty-four hours by catheter. Vomited about twenty times, about 150 c. c. each time.

November 17—Vomiting unabated; light green fluid coming up in large quantities. Bowels moved three times spontaneously. Abdomen distended. Still collapsed but conscious.

November 18—Condition desperate and gastric lavage done, thin tube easily passed, and large quantity of thin, green fluid withdrawn. Improvement almost immediate, abdominal distention disappeared, sensorium clearer. Rectal feeding. No vomiting for eighteen hours after lavage. Bowels moved spontaneously, thin and brown.

Gastric lavage once or twice daily for three days. Rectal feeding only. Convalescence slow; vomited and remained weak, slightly delirious now and then.

November 21—Retained iced tea and orange juice.

November 22—From this on improvement more rapid. Retained koumyss, buttermilk and chicken broth, and strength slowly returned. Remained in hospital two months suffering with ulcers on legs where she had been injected. Since then her health has been perfect.

The author thinks there can be no doubt as to the diagnosis. The violent and increasing vomiting, collapse, distention of abdomen, and nature of vomitus are all characteristic, also the disappearance of the abdominal distention after lavage. The regular spontaneous movements of the bowels and the persistence of the liver dulness precluded the idea of a perforation, which was first suspected.

Authors conclusions:—

1—During the course of convalescence from some acute or chronic disease the stomach may undergo rapid dilatation.

2—This condition is marked clinically by a sudden and violent onset; vomiting is violent and intractable; large quantities of fluid are ejected; the fluid is usually greenish, due to admixture of bile. The patient is reduced to a state of collapse or exhaustion which may prove fatal in a few days.

3—During the progress of the disease the abdomen becomes distended, the right hypochondrium remaining flatter. The bowels move spontaneously and a splashing sensation may be elicited over the site of the distention. Sensorium usually cloudy.

4—If treatment is unsuccessful the abdomen becomes more distended, vomiting ceases, and the patient dies of exhaustion.

5—Indications for treatment are:

- I. Supportive measures.
- II. Use of stomach tube one or more times daily, as early in case as possible.
- III. Rectal feeding.
- IV. No food by mouth until vomiting is nearly or quite controlled.

6—The treatment without lavage is unavailable and the use of narcotics worse than useless.

Rosenheim (*Magenkrankheiten*, 2 Aufl page 452) has also observed cases of mechanical insufficiency of the stomach occurring periodically in neurasthenic patients.

Ewald (*Diseases of the Stomach*, page 290) states that very appreciable dilatation may occur in which the injurious effects are equalized by efficient compensation on the part of the absorptive and motor functions. Thus some individuals may for years have an abnormally large stomach which causes them little or no trouble, just as people live for years in ignorance of the existence of a valvular lesion, owing to perfect compensation of the heart muscle. But some day, in the case of the stomach, the compensation fails, and then suddenly, or in a surprisingly short time, all the symptoms of the dilatation appear. These are the cases in which the dilatation has apparently arisen acutely, and which are spoken of especially in the English literature. (See page 267.)

Albutt (*Lancet*, 1887, II, page 905) in a paper on simple dilatation of the stomach pointed out that simple gastrectasis both acute and chronic, and independent of pyloric obstruction, was often overlooked and indeed many physicians have been disposed to ignore it in an uncomplicated form. He urged the great importance of diagnosing the disease, whether it occur as a complication of febrile or debilitating illness or as a result of prolonged gastric derangement and as a malady to which infants, youths and adults were liable. He held further that the dilatation was due rather to a diminished power of resistance on the part of the stomach wall to the normal or slightly augmented intra-gastric pressure, than to a giving way of the stomach wall owing to largely increased pressure from within.

J. B. Hunter (*Boston Medical and Surgical Journal*, Vol. cxvii, page 361) reports a case of acute dilatation of the stomach following laparotomy.

Female, married four years, never pregnant, age 28. Dysmenorrhœa and pelvic bearing-down pains; right inguinal hernia; well nourished. Local treatment for endometritis and for prolapsed and painful ovaries without benefit. Tait's operation performed. Physical examination showed no organic disease and nothing unusual to direct attention to the stomach. Typical operation, catgut ligatures. After operation continued nausea and vomiting and patient died on the ninth day from exhaustion. Autopsy showed

the abdominal cavity to within three inches of pubes occupied by the dilated stomach, which contained one gallon of dark acid contents (color not noted.) No obstruction of pylorus! Chronic inflammation of mucous membrane and marked atrophy of all the coats. Nothing noted in report as to presence or absence of peritoneal adhesions nor fresh exudate, nor whether the stomach was washed out or not.

H. Schultz in an article entitled "Zur Casuistik der acuten Magenerweiterung" (*Jahrbucher der Hamburgischen Staats Krankenanstalten*, 1890; vol. 2, page 145) says that dilatation of stomach should be of interest because it can be diagnosed with the ordinary physical methods of examination and without chemical analyses. The causation of the atonic paralytic condition of the muscularis may be:

1. General low condition of the vitality, as in the different anæmias, cachexias—tuberculosis.
2. Infiltration of the muscularis by chronic gastritis—chronic venous engorgement.
3. Disturbance of innervation by diseases of the brain and spinal cord—mental diseases—hysteria and hypochondriasis.

Aside from the above many authors (Andral, Lieutaud, Majendie, Duplay, Skoda, Rosenbach) believe in a simple, primary or essential weakness or paralysis of the stomach wall. Schultz reports a case as follows:—

Nov. 28, 1889—Female; 24; single. No previous illness. Four months ago was taken down with severe febrile disease lasting to date. The exact nature of the ailment could not be determined by the attending physicians. The diagnosis lay between typhoid and malaria. Examination Nov. 28—Patient, previously well nourished, is now in a state of extreme emaciation; temperature normal; pulse 84, regular, weak; pains in feet, ankles and knees. Feet in position of pes equinus, toes flexed—knees flexed; joints very painful on motion.

Heart and lungs negative. Abdomen very much retracted, no tenderness anywhere. Spleen negative. Bowels costive. Urine contains trace of albumen, no morphological elements.

Put on liquid diet, baths, wine, stimulation.

December 13—Improved, is stronger and has some appetite. Can now eat scraped beef and potatoes without causing distress. No nausea nor vomiting. Abdomen still retracted—no tenderness anywhere. December 17.—Knees and ankles less painful and can now be moved more easily. Massage and passive motion.

December 19—During night of 17th was taken with sudden severe pains in gastric region. Suffered terribly and morphine brought only slight relief. Yesterday vomited frequently large amounts of greenish fluid. This morning bulging of epigastrium (contour of the stomach) peristaltic movements can be elicited on handling. Liver dullness much diminished from below and tympany all over site of left lobe. Great tenderness now in epigastrium. Had a spontaneous evacuation of the bowels. Treatment—nutrient enemata; stimulation; morphine.

December 20—The distention in the epigastric region has increased and extended downwards to midway between umbilicus and pubes. The abdomen above symphysis is retracted. Great tenderness over the distended area which gives forth a deep, tympanitic percussion note—some dullness in the flanks. No peristaltic movements. Continued vomiting of bile stained fluid.

Death from exhaustion the same evening, the condition having lasted three days.

Autopsy five hours later. On opening abdomen the dilated stomach is revealed occupying almost the entire cavity from xiphoid to pubes. At the site of the pylorus the dilated duodenum and pyloric half of the stomach join at an acute angle, the stomach forming the descending, the duodenum the ascending limb. Duodenum in its lower third slightly stenosed owing to dragging down of stomach. No peritoneal adhesions. Stomach contains large quantities of an acid, greenish fluid. Walls of stomach attenuated.

No stenosis of pylorus, rather dilatation admitting five finger tips and involving upper portion of the duodenum. Ecchymoses in mucous membrane. No ulcers, no scars, no pigmented areas.

Spleen, liver and kidneys negative.

Microscopic examination—Muscularis of stomach wall very thin, fibres partly in granular degeneration—many fresh hæmorrhages. The glands are distorted from their normal relative direction and position; gland cells mostly intact. Some fresh ecchymoses and granular degeneration here and there.

[NOTE—The author makes no mention of the use of the stomach tube].

Poensgen (*Die motorischen Vorrichtungen des menschlichen magens und seine Störungen*.—Preis schrift, Strassburg, 1882, page 96) believes that acute dilatation of the stomach may be due to definite structural changes or may appear without such, viz., functional.

Brinton (*Diseases of the Stomach*) in treating of acute paralytic dilatation of the stomach says that sometimes during convalescence from acute febrile diseases, the patient will suddenly be taken with violent abdominal pains associated with great tympany and tenderness of abdomen, and no reason present to suspect peritonitis. The patient may rapidly become exhausted and die. He has performed autopsies on such cases and found the stomach enormously dilated and filling the entire abdomen. No mention of stomach tube is made.

Acute dilatation of the stomach according to Osler is rarely seen, although it has been known to occur when large amounts of solid or liquid food are taken. Occasionally this leads to extreme paralytic dilatation and Fagge has described two cases, which came on in this way, one of which proved fatal.

Boas (*Deutsche Med. Wochenschrift* 1894, page 155 and 172) states that cases of acute dilatation of the stomach are of the greatest rarity. He could find only two cases recorded in the literature, viz., Keylnack (in the *Medical Chronicle*, 1892) and Schultz (*Jahrbucher der Hamburger StaatsKrankenanstalten*, 1890). Both cases were cachectic individuals, the dilatation coming on without appreciable cause and ending fatally.

Boas cites a case as follows—Male, age 20, previously healthy; never had any gastric disturbances previously.

December 10, 1893. Error in diet, ate too much fat roast goose and was taken sick next day with anorexia and belch-

ing of gases, no nausea, vomiting nor diarrhœa. After three days diarrhœa, nausea and vomiting of acid fluids of foul odor, finally exceeding in amount that taken into the stomach. Constipated now.

January 10. Greater curvature of stomach when the organ is moderately distended reaches the breadth of four fingers below navel; when distended with gas it reaches two inches farther. Splashing and succussion can be elicited by agitation. No tenderness anywhere. Passage of stomach tube brought out three hundred c. c. of a thin liquid, containing particles of undigested matter from previous meals. The fluid contained sulphuretted hydrogen; free hydrochloric acid in about normal amount. Microscopically—sarcinæ, bacteria, yeast, fat crystals, muscle fibres, starch cells.

Stomach washed out regularly after that; 200-400 c. c. were evacuated at each time. The conditions improved immediately—no more vomiting nor sour eructations.

This is a case where an acute dyspepsia arising in an individual previously healthy, as to the stomach, was followed by an acute dilatation of the stomach. Analogous to the "acute over-exertion of the heart" of O. Fränzel, Boas would designate the above condition of the stomach, as an "acute over exertion of the stomach."

Boas' prognosis, quod restitutionem ad integrum, is not very favorable; he thinks the tonus will never be quite restored to the normal. He thinks that an emetic administered at the onset of the illness would have prevented the development of the dilatation.

Dr. A. Albu (*Deutsche Med. Wochenschrift*, No. 7; 1896) in a communication "Ueber acute tödtliche Magen-dilatation" states that acute and chronic dilatation of the stomach differ essentially as to etiology. In the acute dilatation, stenosis of the pylorus takes no part, whereas it is important in the causation of the chronic dilatation. Acute dilatation in contradistinction to the chronic, arises from an affection of the stomach wall. Acute gastrectasia develops without there having been any previous diseases of the stomach. However a diminished tonus of the stomach wall of long duration, is a predisposing factor. Albu with Boas accepts two forms of acute gastrectasia.

1. *Dilatatio ex ingestis*, viz., due to over eating. (Cases of Hilton Fagge, A. Fraenkel, Boas and others). This is not the type of extreme, rapidly progressive, fatal cases.

2. Dilatation from paralysis of stomach wall of central nervous origin. (Cases of Gross, Köberlé, Hunter, Kely-nack, Schultz, A. Fräenkel.)

Albu's case is as follows:

May 20, 1895—Male, 26 years old, admitted to hospital with scarlet fever. Previously healthy. In the habit of over-eating and over-loading the stomach. For ten days he ran a typical course of fever with severe angina and some cardiac weakness. Temperature came down to normal and he began to have some appetite.

May 31—Began to vomit violently, without any ascertainable cause as to diet. Vomiting repeated and epigastric tenderness appeared.

June 1—Still vomiting, getting weaker, sensorium cloudy. Vomitus is watery with mucus and bile admixed. It was now evident that there was a great distention of the upper abdomen, especially to the left side. Fluctuation and succussion. Percussion elicits dullness over the protuberant area and confluent with the dullness of liver, heart and spleen. Greatest intensity in left hypochondrium.

Patient apathetic, great pain in stomach, no evacuation of bowels for two days. Pulse scarcely palpable, extremities cold. Vomiting ceased later in the day. Stomach pump brought out large quantity of green, foul smelling fluid. No improvement, delirium, death in the following night in spite of constant stimulation.

Autopsy. Parenchymatous myocarditis and nephritis. Gastritis parenchymatosa pigmentosa. *Dilatatio permagna ventriculi*; no pyloric stenosis, no scars from old ulcers.

As the pain and tenderness of the distended abdomen was so sudden and so great, the author considered the possibility of peritonitis, especially with the dullness in the lateral dependent portions of abdomen.

Two further points of importance were also noted, viz., (1) total absence of peristaltic movements and (2) cessation of vomiting when the dilatation is at its maximum. Finally referring to the cerebral symptoms—apathy, somnolence,

delirium—Albu would consider them due to the absorption of toxic substances from decomposition in the stomach, rather than to anæmia of the brain.

The primary causation of the acute dilatation may be regarded as toxic, as following some acute infectious disease; and indeed paralyzes of the most varied regions of the nervous system have been noted e. g., after typhoid, cholera and puerperal fever. He quotes from Brinton, who considers the solar plexus and pneumogastric the nerves affected and paralyzed by the action of toxic substances upon them.

Engström (*Nordiskt medicinsk Archiv*, 1895, Sept. 6) reports a case of intestinal paralysis following operation in the abdominal cavity.

Female, 37; ovariectomy right side. Sponged out large amounts bloody ascites. After operation vomiting, soon fecal in character, meteorism, accelerated pulse, subnormal temperature. Sensorium clear. Stimulation. Lavage of stomach and intestines. Reopened abdomen and found no mechanical obstruction. One hour after death cultures taken from peritoneal cavity, the same remained sterile. Ileum greatly distended; upper portion duodenum and colon not distended.

Grundzach (*Ueber Lahmung des Magens und Darms namentlich nach Laparotomie*, Medycyna 1895, Nos. 9 and 10) reports a case of paralysis of stomach and intestines after laparotomy.

After operation for rupture of an extra-uterine pregnancy, there developed in the first three days the symptoms of motor and secretory paralysis of the stomach, viz., great tympany in epigastrium reaching to navel. Frequent vomiting of a fermenting fluid (absence of HCl., traces of lactic and acetic acids, yeast). Constipation and no flatus. Rapid, thready pulse, subnormal temperature, apathy. On the sixth day passed flatus and vomited 50 c. cm. fluid, grass-green, containing free hydrochloric acid, but no yeast nor lactic acid. Recovery uneventful after that. With reference to treatment—no nourishment—absolutely nothing by stomach and instead nutrient enemata, lavage of stomach—ice-bag to abdomen and sometimes faradism.

B. Riedel (*Chirurgische Behandlung der Gallenstein Krankheit in Handbuch der Speciellen Therapie der Inneren Krankheiten*—Penzoldt and Stintzing):—After operation for gall stone, in thirty six or forty eight hours the patient may begin to vomit; no rise in temperature. The upper half of abdomen becomes tympanitic, then lower abdomen is affected, even down to left Poupart's ligament or to symphysis. Vomiting continues; pulse rises and becomes softer, 130—140 beats. Face becomes sunken; extremities cool. It is the picture of a foudroyant peritonitis—yet it is not peritonitis!

If the abdomen is opened no trace of fibrous or inflammatory exudate is found, but instead the enormously dilated stomach. The cardiac half passes down horizontally towards the left Poupart's ligament, there it joins at an acute angle the ascending pyloric portion. The lesser omentum is stretched between. The condition is an acute dilatation of the stomach coming on twenty-four to twenty-eight hours after operation in individuals whose stomach was, at the time of operation, seen to be normal.

Riedel had two cases, in both there existed adhesions; in one between liver and right end of lesser curvature—in the other a band of omentum passing over pylorus to lesser omentum. These adhesions may have predisposed to the dilatation, but it is certain that a previously healthy stomach may become, in twenty-four to forty-eight hours, dilated down to pubes and it is immaterial whether due to the effects of separation of adhesions or to some obstruction in the pyloric region.

The vomiting is excited first by the fluids taken into the stomach soon after operation; but soon the amount vomited or removed by tube, exceeds by far what has been taken per os. The fluid is thin, serous, containing dark coagula; these latter are structureless; red corpuscles whose pigment had diffused were also found.

To prevent vomiting, Reidel would give no fluids by mouth in the first twenty four hours. If vomiting occur nevertheless, wash out the stomach and administer 0.01 gm. morphine hypodermically. The effect is marvelous—the vomiting ceases and the pulse becomes stronger. Lavage

may be repeated three or four times daily. He thinks he could have saved his two cases had he resorted to these procedures; but on the contrary he thought there was infection; reopened the abdomen, found out his mistake and then the patients *did* die of infection.

"Nothing from the time of Harvey gave such an impetus to the study of exact medicine as the introduction or discovery of auscultation by Lænnac in 1816, and, indeed, Harvey's great discovery had little practical application in clinical medicine until its introduction. Anenbrugger had introduced percussion in 1761; Lænnac had adopted it, and his discovery of auscultation, with his zeal as a morbid anatomist, enabled him to work out most of the great problems of diseases of the thorax. The knowledge thus begun has by the labors of many workers increased in range and accuracy down to the present time and the diagnosis of diseases of the chest has reached a degree of precision unequaled in any other department of practical medicine. We are now able not only to recognize diseases of each of the valves of the heart, but to estimate the degree and the influence of the lesion on the greater and lesser circulations, and to trace the course and effects of emboli carried along the blood stream. Our knowledge of diseases of the lungs is nearly as complete as that of the circulatory system."—Macenzie—*Address in Medicine, Brit Med. Ass'n.*, 1897.

MYCOSIS OF THE THROAT. By J. A. Bach, M. D., Milwaukee, Wis.

(Abstract of a Clinical Lecture.)

Mycosis of the tonsils and pharynx is no doubt one of the most uncommon diseases met with in the throat. The number of cases reported by observers of the widest experience does not exceed a few dozen. Heryng, up to a recent date, had collected eighteen cases, of which number six were from his own practice. Other well known specialists, such as Fraenkel, Bayer, Klebs and Newcomb have reported a number of cases. Apparently the disease is of recent date, and the first case we find reported is by B. Fraenkel in 1878.

The ætiology of tonsilar mycosis is still not very clear, and the conditions which favor its development are not fully determined. It seems to be found in persons otherwise perfectly healthy as well as in those debilitated through any cause; however, it is supposed that a catarrhal tendency is favorable to the development of the difficulty.

Pathologists are not in accord as to the interpretation of the morbid anatomy of the disease. The preponderance of evidence seems however to establish almost beyond a doubt, that the local symptoms of the disease are of bacterial origin. This being a fact, one could reasonably expect the disease to be contagious or infectious, which, however, does not seem to be the case, as far as our present evidence goes to show. Persons that have been exposed for long periods of time in close association with those affected, have never been known to take the disease, thus clearly establishing the necessity of constitutional predisposition for the contraction of the affection.

The chief objective symptom is the formation of a comparatively dense, but not very thick, whitish membrane covering the area affected. This membranous formation may begin with a very small area and extend peripherally until it involves a large part or the whole of the upper throat. Under the microscope this formation is composed

largely of *leptothrix buccalis* and epithelial detritus. Hemenway claims to have discovered another fungus and in this he is corroborated by Fraenkel and Sadebeck, who have called it the *bacillus fasciculatus*, on account of the tendency to arrange themselves into bundles; in this respect, as well as in a few other details, differing from the *leptothrix buccalis*. The membranous patches are firmly adherent and upon their forcible removal a little blood is liable to appear at different points of the denuded field, which otherwise looks very red. It is, however, evident that unlike diphtheria, the membrane is not incorporated with underlying tissue and in this respect resembles more closely a croupous exudate.

As a rule, there is no odor imparted to the breath.

The extent of the deposit (as in this case) may be very extensive, stretching from one tonsil to the other, involving the pharynx and extending up to a considerable degree into the naso-pharynx. In one of my recent cases, the disease, after spreading extensively in the throat, extended and involved the larynx and bronchial tubes, finally causing death through broncho-pneumonia.

The disease seems to run an indefinite course and without giving the patient any particular discomfort in the large majority of cases, excepting a slight itching and stiffness. It may run along for months or years or until some effective treatment puts a check to it. The diagnosis as a rule is not difficult; however cases may occur where it might be mistaken for diphtheria or follicular inflammation.

Subjective symptoms are nearly always absent and the patient may only accidentally discover that his throat does not appear normal. There is but very little congestion in a throat thus affected, as you will see from the patient I here present. These milk-like, shining patches which may be circumscribed, (and as a rule are) and just thick enough to effectively cover the underlying mucous membrane, seem to be a constant objective factor in the disease.

The history of the case, its long and persistent duration, with a gradual extension, the absence of general symptoms and finally its macroscopic and microscopic appearance, will suffice as a rule, to establish the diagnosis. I might add that

its peculiarly great resistance to even the most heroic treatment, might be set down as a diagnostic sign of the disease.

The treatment to be at all successful demands surgical interference and the thorough destruction of the diseased area. The most effective means at hand for this purpose is the actual cautery and it seems to be the surest means with which to effectively prevent the recurrence of the membrane.

Curettage and the most thorough use of powerful antiseptics, such as pure carbolic acid, tincture of iodine and the like, is followed with hardly an exception, by the rapid reproduction of the membrane. This latter fact would seem to indicate that there must be more involved than the mere presence of specific bacteria to produce the disease. That such is the fact seems to have been shown in a recent case, where, after using the various remedies without satisfactory results, at the suggestion of a brother practitioner, I was induced to use the antitoxin of diphtheria with an ultimate good result. The amount injected in all was 40 c. c. and the period of time ten days before the membrane began to clear so that after about fifteen days the membrane was nearly all gone. In this case the disease lasted a little over three months. It seems certain that the alterative effect upon the vital functions thus produced cured the disease rather than any local means which were practically all abandoned at the time the antitoxin was used.

Chiari, of Vienna, reported a case which, after his failure to cure by local means, recovered ultimately through the smoking of cigarettes. Besides this case a number of cases have been reported cured through means equally indefinite; all of which remedies probably had nothing to do with the recovery of the cases, save that they were the last remedy used before recovery and received credit for the cure. Whether the use of the antitoxin of diphtheria in my last case belongs to this category of remedies or whether a certain relation exists between the membrane of diphtheria and that of mycosis, thus rationalizing the application of the antitoxin, remains to be seen. From my experience,

I should certainly again use the antitoxin with considerable confidence.

[In the *Archives of Pediatrics*, November '97, I find an extract taken from the *British Medical Journal*, where Dr. Lacruz, of Barcelona, has tried the serum of a healthy horse upon a large number of cases of trophic disturbances among children. He reports remarkable results in favor of the serum in debility of whatsoever kind, in children. In sixteen cases of chorea, a cure was effected in two weeks. He states "the good effects of injection are quickly manifested: cases of athrepsia in particular are speedily cured."

It seems more than probable from the above that the antitoxin of diphtheria exercises decided tonic and alterative effects owing to the serum of the horse in which it is found. The cure of the case of mycosis no doubt might be ascribed to this fact.]

"Thucydides it was who said of the Greeks that they possessed 'the power of thinking before they acted, and of acting to.' The same is true in a high degree of the English race. To know first what has to be done, then to do it comprises the whole philosophy of practical life.

Sydenham (*Anglia lumen*, as he has been well called) is the model practical physician of modern times. Linacre led Harvey back to Galen, Sydenham to Hippocrates. The one took Greek science, the other not so much Greek medicine as Greek methods, particularly intellectual fearlessness, and a certain knack of looking at things. Sydenham broke with authority and went to Nature. It is an extraordinary fact that he could have been so emancipated from dogmas and theories of all sorts. He laid down the fundamental proposition, and acted upon it, that 'all diseases should be described as objects of natural history.' To do him justice we must remember as Dr. John Brown says, 'in the midst of what a mass of errors and prejudices, of theories actively mischievous, he was placed, at a time when the mania of hypothesis was at his height, and when the practical part of his art was overrun and stultified by vile and silly nostrums.' "—Osler.

CLINICAL LECTURES ON DISEASES OF THE
HEART, LUNGS AND PLEURA.—By Joseph M.
Patton, M. D., *Professor of Internal Medicine,*
Chicago Policlinic.

CHRONIC ENDOCARDITIS (Continued).

Mitral Stenosis. Mitral stenosis is a lesion of early life, though it occurs at all periods. It is more frequent in women than in men. It is usually the result of rheumatic endocarditis, though it is said to occur from the extension of aortic valvulitis. It is usually combined with more or less mitral regurgitation, frequently with aortic lesions, and is practically always associated with tricuspid stenosis, whether the latter be congenital or not.

The lesion may be due to papillary growths; connective tissue growth with contraction, rigidity and calcareous degeneration of the flaps; or adhesion of the flaps with a button-hole or funnel-shaped opening. The effect depends on the degree of obstruction to the blood current. The resulting rise in pressure in the left auricle and pulmonary vessels is unopposed and extends to the right ventricle, which furnishes the compensating force. The left auricle may be considerably dilated, and its walls somewhat hypertrophied, usually not to any great extent, though in some cases considerable hypertrophy may occur. The right ventricle becomes enlarged through hypertrophy and slight dilatation. Its walls may be as thick as those of the normal left ventricle, and do not collapse when incised. The right ventricle displaces the left in the formation of the apex of the heart. The left ventricle is not enlarged and may be smaller than normal owing to diminished intraventricular pressure. The aorta may also be smaller than usual for the same reason. In some cases the left ventricle may be enlarged, but this is due to associated conditions.

The pulmonary blood vessels may become thickened, and atheroma of the smaller branches may occur from the

increased tension. The passive pulmonary hyperæmia may lead to brown induration of the lower portion of the lungs, or nodular infarctions, pulmonary apoplexy or œdema of the lungs may occur if the heart is suddenly overtaxed. When the right ventricular wall becomes weak and dilatation becomes excessive, tricuspid regurgitation will occur, followed by the usual effects of venous obstruction.

The resistance to the pulmonary circulation caused by mitral lesions, produces a serosity of the pulmonary tissues which is antagonistic to the development of tuberculosis, which rarely, if ever, develops in an individual the subject of a well-marked mitral lesion, and, when the latter develops co incident with or subsequent to tuberculosis of the lungs, the course of the latter is more favorable and the disease is more amenable to treatment.* On the other hand, pulmonary tuberculosis frequently occurs in connection with pulmonary stenosis.

According to Allyn, mitral stenosis is the most unfavorable heart lesion in its relation to pregnancy. While opinions differ in this regard, it is probably a fact that the symptom complex of mitral stenosis is more unfavorably affected by the pregnant state than that of any other valvular lesion.

The subjective symptoms of mitral stenosis are not important. Women with mitral stenosis are usually of nervous, restless, irritable disposition. They are generally anæmic, and complain of gastric distress, which is most often due to the mechanical effects of the lesion on the circulation of the stomach.

Irregular pains about the region of the apex of the heart is a frequent cause of complaint. Palpitation and dyspnœa are troublesome on exertion. Walking against a strong wind will cause marked dyspnœa. Sudden and severe exertion may cause pulmonary œdema. Nervous influences of all kinds are extremely prolific in causing dis-

*Rokitansky long ago remarked on the antagonism of mitral lesions and pulmonary tuberculosis as a principle governing the interrelation of these diseases. Von Welschmayr believes this principle holds good, and cites Frommold (21 cases in 226 of valvular disease), also Kryger (10 cases of valvular lesion in 1100 autopsies on tuberculosis patients). I have never seen pulmonary tuberculosis develop in a person the subject of well-marked, chronic, mitral disease.

treassing palpitation. A dry, hacking cough simulating a nervous cough may be troublesome. Profuse, watery, mucous or blood-stained expectoration may indicate congestion or oedema of the lungs. Orthopnoea is not as troublesome as in other cardiac lesions.

Dropsy is an erratic symptom in mitral stenosis. According to Broadbent, cyanosis and dropsy in mitral stenosis indicate tricuspid regurgitation. While either of these symptoms is indicative of failing compensation, and dropsy may point towards the possibility of tricuspid regurgitation, it cannot be regarded as indicative of its existence.

Inspection shows some increase in the force and area of the apex beat with displacement to the left. The distinctly visible area of impulse has a sudden, jerky motion. The impulse of the left auricle may be visible in the third or fourth interspace inside the mammillary line. There will be epigastric pulsation if the right ventricle is much enlarged.

Percussion determines increase in the transverse dullness from extension of the right border of cardiac dullness which may reach the right nipple line. While compensation lasts this extension in the right border of dullness is usually not more than an inch. The apical dullness is rounded, displaced to the left, but remains at the same level. The left border of dullness is displaced somewhat to the left and may extend upward and outward at the base from enlargement of the left auricle.

Palpation locates the apex beat and the abrupt and, at times, irregular character of the heart's action. A *thrill* may be felt in the region of the apex beat and is best determined by laying the finger lightly over the interspace. It is more the fine character of the thrill than the fact of its presence which is distinctive of stenosis. A thrill is not an invariable accompaniment of mitral stenosis, nor is it always indicative of the lesion. In some cases when there is considerable enlargement of the left auricle, the contractions of the auricle and ventricle may be separately appreciated by the fingers.

The pulse of mitral stenosis varies greatly in character. It may be regular and nearly normal in volume and tension.

Usually it is more or less irregular, both in force and rhythm, and is quick in character. According to Shattuck, and, indeed, most authorities, the pulse is regular except when disturbed innervation or compensation is present. In my experience the majority of cases of mitral stenosis exhibit a more or less persistent and characteristic arrhythmia which is independent of dynamical failure. How much disturbance of cardiac innervation may have to do with the arrhythmia is a question, though that it is a frequent cause is certain. Reflex nervous influence is more potent in the production of cardiac irregularity in mitral stenosis than in any other valvular lesion. Balfour states that irregularity of cardiac rhythm is always present to a greater or less degree in cases of mitral stenosis. The sphygmogram of mitral stenosis shows a rather pointed summit with a wavy line of descent. There is almost always more or less marked irregularity of the tracing. Inequality of the pulse in corresponding arteries (*pulsus differens*) is often present in mitral stenosis.*

On auscultation we hear the characteristic murmur of mitral stenosis with an accentuated second pulmonic sound, which is sometimes reduplicated.† The second sound is usually plainly heard in the region of the apex. The first sound is abrupt and resembles the second sound. Later the second sound may disappear at the apex and the first sound become loud, short and sharp; following this the presystolic murmur may disappear and the short, sharp, first sound, with perhaps a tricuspid systolic murmur, will be all that can be heard. According to Broadbent, these signs correspond with the different stages in the dynamical condition of the heart in mitral stenosis.

*According to Popoff inequality of the pulse in mitral stenosis is due to pressure on the arteries by distended auricles and veins: competent tricuspid with distended left auricle and pulmonary veins affecting the left pulse; incompetent tricuspid with distension of venous trunks entering the right auricle, affecting the right pulse.

†True reduplication of the second sound is heard only at the base of the heart and is due to unequal pressure in the pulmonary and aortic systems—the valves do not close together. "Simulated" reduplication of the second sound is heard at the apex of the heart, the element of reduplication differs in time and character from true reduplication, and is probably produced at the mitral orifice or in the cavities of the left side, though the nature is uncertain. Balfour considers true reduplication of the second sound and a thrill as diagnostic in the absence of murmur.

The murmur of mitral stenosis is pre-systolic in time. In connection with the heart sounds it produces a triple rhythm. It is a rough or vibratory in character. It may be longer than any other murmur when it occupies almost the entire period of diastole, or, it may be merely a short puff just preceeding or accentuating the first sound. There may be a short interval between the murmur and the first sound, or the murmur may be continuous with the first sound. The murmur is best heard just above or inside of the apex beat and is synchronous with the thrill. Its area of diffusion is less than that of any other cardiac murmur, being confined, as a rule, to the region of the apex. In exceptional cases however, the murmur may be heard as low as the ninth rib or high in the axilla.

The murmur of mitral stenosis is probably the most variable of all valvular murmurs. Walsh states that it may come and go from day to day, and all writers agree that it disappears with the development of dynamical failure. Two conditions are necessary for the production of the murmur, i. e., roughness or contraction of the opening and a sufficient amount of auricular contractility. Dilatation of the mitral opening modifies the effect of the one cause, and variation in auricular pressure, the other. Variation in auricular pressure occurs frequently from causes which affect temporarily the contractile power of the auricle, hence the variable nature of this murmur.

The following history is from a case somewhat unique in the fact of an uncomplicated, pure, mitral stenosis in a man 62 years old.

Man aged 62. Previous history unimportant. Never had any distinct rheumatic manifestations. During the last six or eight years has suffered more or less with dyspeptic troubles. Is anæmic and thin, though never was rugged and strong. For last two years has been troubled with cardiac palpitation and intermittent præcordial pains. At times dyspnoea and some watery expectoration. Lately has frequent dizzy spells or attacks of faintness. Never had any dropsy. Pulse rapid (195) and arrhythmic.

Heart apex in fifth interspace one-half inch to the left of normal situation, impulse slightly increased in force, quick and irregular in nature. A distinct thrill is present a trifle to the right of the apex beat.

A loud, distinctly pre-systolic murmur is heard in the mitral area, which is not transmitted in any direction. It is rough, vibratory and high in pitch. There is a short but distinct interval between the murmur and the first sound. The latter is rather short and more abrupt than usual. The second pulmonic sound is intensified.

The character of the first sound, the second pulmonic sound, the thrill, the pre systolic murmur and the arrhythmic heart's action in this case were quite characteristic.

Mitral Regurgitation.—This lesion is the most common of all valvular lesions. It is most frequent in early life but may occur at any age. It (mitral valvulitis) is usually primary though it may be secondary to aortic valvulitis. It is frequently combined with stenosis of the mitral orifice. *Relative* mitral regurgitation occurs as a mechanical consequence of dilatation of the left ventricle from stretching of the auriculo-ventricular opening. It is therefore a secondary effect of all conditions which cause dilatation of the left ventricle.*

The mechanical effect on the heart of mitral regurgitation is similar to that of stenosis as far as the left auricle and right ventricle are concerned. The left auricle, however, does not become so greatly enlarged as in stenosis. The left ventricle becomes more or less dilated and hypertrophied. This is generally ascribed to the effect of the extra amount of blood entering the ventricle during diastole and the auricular contraction, this causes dilatation and there is subsequent compensatory hypertrophy. It is quite possible that in many instances the dilatation of the ventricle is largely due to muscular weakness from changes in the muscle caused by the rheumatism.

Compensation for mitral regurgitation is furnished through hypertrophy of the right ventricle. As long as the

*The question is raised whether mitral regurgitation occurring from rheumatism, is not due to muscle failure rather than to valvulitis. Fisher states that post mortem records show that pure and simple mitral regurgitation is a comparatively rare cause of death. Lees states that careful percussion will demonstrate general cardiac enlargement in acute and sub-acute rheumatism. Steele thinks that pure mitral regurgitation of rheumatic origin results from muscle failure, which, with mitral stenosis is the usual result of rheumatism. Undoubtedly we have muscular changes in the heart associated with rheumatism and some cases of regurgitation may be due to this rather than to valvulitis, but that this is the rule cannot be accepted, especially in young subjects.

compensation is maintained there are few systemic effects; with its failure, however, we have the systemic evidence of failing circulation.

There are no subjective symptoms of mitral regurgitation as long as compensation is well maintained, which may be for an indefinite period, neither patient or physician suspecting the existence of a heart lesion. With loss of perfect compensation there will occur dyspnoea, a short, hacking cough, and frothy, watery or bloody expectoration. Exertion causes marked dyspnoea and cardiac palpitation. When backward pressure through the tricuspid valve occurs, there will be symptoms of venous stasis, cyanosis, enlargement of the liver with a sense of weight and fullness. There may be slight jaundice, nausea, anorexia, headache. Dizziness or stupor may occur from venous pressure. The urine is diminished in quantity, is high-colored and deposits lithates freely. It may contain albumen and perhaps blood casts. Constant dyspnoea from pulmonary congestion and œdema with free watery or bloody expectoration will occur. The latter may be very plentiful if pulmonary congestion is great and frequently affords considerable relief to the patient. Edema is a common symptom and is present in most advanced cases to greater or less extent. It may become very extensive and involve the entire body.

Inspection shows the area of cardiac impulse to be increased; it may be very extensive. In young children there may be prominence of the præcordium. A double cardiac impulse may rarely be seen (Bamberger, Skoda, Leyden). Epigastric impulse is visible if there is much enlargement of the right side of the heart.

Palpation determines the apex beat to be displaced more to the left than downward; it may be well outside the mammillary line and not lower than the sixth space. Again there may be little or no downward displacement while there is considerable lateral displacement. A systolic thrill or tremor may be felt at the apex, or perhaps at the base of the heart, but it is in no way distinctive of mitral regurgitation.

The pulse of mitral regurgitation is not strong in proportion to the heart's action, owing to the amount of regur-

gitated blood. It is soft, and regular as long as compensation lasts. When compensation begins to fail the pulse becomes irregular in force and rhythm and later becomes intermittent. These rhythmic disturbances of the pulse are often the first signs of failing compensation, and as this condition advances they become very marked. The sphygmogram of mitral regurgitation is not characteristic. In advanced cases it will show simply an irregular, wavy line. When the heart's action is fair it shows amplitude, and breadth of the diastolic notch.

Percussion shows the extension of cardiac dullness to the right, as well as to the left and downwards.

On auscultation we obtain the characteristic murmur of mitral regurgitation; a systolic murmur which occupies a portion or the whole of the period of the first sound and more or less completely obscures it. The first sound—particularly in the early stage—may be clear and closely followed by the murmur. The murmur may be short but usually it is long. Its quality is soft and blowing, the pitch low, though exceptionally it may be high-pitched and rather harsh. Its area of diffusion is to the left. Usually the murmur is lost between the anterior and mid-axillary line, to be heard again along the spine about the fifth and sixth dorsal vertebræ on the left side. In some cases the murmur is carried directly around the left side of the chest. Again it may be faintly diffused all over the front and rear of the left chest.

The murmur of organic mitral regurgitation varies much in intensity and character from time to time. It rarely disappears completely except with the advent of compensatory failure, or possibly when occurring in very young children. The so-called "dynamic" regurgitant murmur occurring in anæmia or chorea may disappear.

Relative mitral regurgitant murmurs are very soft, and, compared with their distinctness at the apex the extent of transmission is slight as they are seldom heard farther than four or five inches to the left of the apex.

During the period of compensation of a mitral regurgitation, the second pulmonic sound is accentuated. Skoda, who first emphasized this fact, considered it a "positive"

sign of mitral regurgitation. It is certain evidence of high pulmonary pressure which is also present in mitral stenosis, though perhaps more variable in the latter condition.

The following history is from a case of simple uncomplicated mitral regurgitation.

Woman 42 years old has been under observation at different times for five years. Had rheumatism when 24 years old. No subsequent attacks of rheumatism. Married at 26, two children. Five years ago she presented herself in the following condition: Heart enlarged; right border one inch to the right of right border of sternum; left border at left mammillary line; apex in sixth interspace just outside mammillary line; blowing, systolic, mitral murmur; intensified second sound; passive congestion of the lower portion of both lungs; congestive enlargement of the liver the lower border of which was below the umbilicus; congestion of the stomach; oedema of both legs as far as the knees. She suffered from dyspnoea, cough and anorexia, and was expectorating freely a thin mucus. Orthopnoea was troublesome. Heart's action slightly irregular. She was relieved by treatment so as to feel quite well. During the subsequent five years she appeared for treatment four different times, each time presenting the same conditions as at her first appearance and each time being afforded the same relief. The last time she appeared the conditions were generally worse than before. Her subsequent history is unknown, but asystolism could not have been deferred for long.

Pulmonic Stenosis. This lesion is rare. The most experienced observers have seen but few cases. It is rarely seen in advanced life, being usually of congenital origin, in which connection it is usually associated with a patent foramen ovale. The majority of the reported cases of pulmonary stenosis have been in persons under thirty years of age.

The pulmonary valves may be fused together so as to have a very small opening. Tumors of the mediastinum, aneurisms or enlarged bronchial glands may press on the pulmonary artery and produce in some degree the symptoms and effects of stenosis of the valves. The effect on the heart of pulmonary stenosis is to cause enlargement of the right ventricle from hypertrophy and dilatation. The tension in the pulmonary system is low and the lungs are frequently the seat of tuberculosis. Tricuspid insufficiency eventually

results from dilatation of the right ventricle. In congenital cases the extent of the physical changes in the heart will be modified in proportion to the effect on the intraventricular pressure, of various degrees of patency of the foramen ovale or of the septum ventriculorum which may co-exist.

There are no rational symptoms specially indicative of pulmonary stenosis. Anæmia is frequently present; dyspnœa, cyanosis, cardiac palpitation and dropsy may be present.

Inspection and palpation will show some increase in the force and area of cardiac motion, slight displacement of the apex beat to the left, epigastric pulsation and perhaps irregularity of the heart's action. A systolic thrill may be felt in the second left intercostal space near the sternal border; according to Potain this is always present and easily recognized. Percussion determines extension of the cardiac dullness an inch or more to the right. Slight displacement of the left border of dullness may possibly be recognized. The basic dullness may reach to the second rib.

On auscultation we hear a systolic murmur. It is heard in the second left intercostal space near the sternal border and is transmitted upward and outward toward the left shoulder. It is not heard toward the apex or in the vessels of the neck.* The murmur is usually plainly heard and is lower in pitch than stenotic murmurs of the left side of the heart. It is louder when the patient is lying down. Basic systolic murmurs, resembling that of pulmonic stenosis may occur from simple anæmia, dilatation of the pulmonary artery, communication between the aorta and pulmonary artery, and patent ductus arteriosus (Carpenter).

The following case presented the cardinal symptoms of pulmonary stenosis in such association that an ante-mortem diagnosis was conjectural only.

Girl, aged 15. Not well developed, sickly since birth. Troubled with dyspnœa on slight exertion; cyanosis if exercises freely; no cough; more or less constant cardiac palpitation; slight clubbing of finger ends.

Examination show moderate general enlargement of the

*According to Carpenter the murmur of mitral stenosis may be heard with greatest intensity anywhere between the second interspace and the level of the xiphoid cartilage.

heart. Basic dullness does not reach above third rib. Epigastric pulsation present. Heart's action irregular. Distinct systolic thrill in second left intercostal space. Blowing, rather rough, systolic murmurs heard at the base and as low as the sixth costal cartilage over sternum. From second left interspace the murmur is transmitted outward and upward for a distance of three inches.

In this case autopsy subsequently proved the existence of congenital pulmonary stenosis, patent foramen ovale and deficient septum ventriculorum, a combination which would explain the symptoms and also the presence of a murmur as low as the sixth rib. The modification of intra-cardiac pressure through these communications explains the comparatively small amount of cardiac enlargement, particularly as regards the right side.

Pulmonic Regurgitation. As an organic lesion pulmonary regurgitation is very rare and its occurrence is doubted by some. It may occur in connection with pulmonary stenosis. Relative insufficiency of the pulmonary valves is occasionally found. A number of instances are reported, most of which are supported by autopsy. Relative regurgitation may occur from disease of, pressure on, or plugging of (Litten) the pulmonary artery; diseases of the lungs or pleuræ (Gourand); or secondary to mitral disease (Gouget, Chaufford). Any cause which will raise the pressure in the pulmonary artery may induce pulmonary insufficiency. Myocardial disease will not cause regurgitation at the pulmonary valves as readily as it will at the other valvular openings, because the depth of the conus arteriosus modifies the effect on the valves of the dilatation which may result from muscular weakness.

There are no rational symptoms of pulmonary regurgitation, though some dyspnœa or cyanosis may be present. The physical signs will be those of enlargement of the right heart. There may be systolic pulsation in the second left interspace, also a thrill, which may be systolic or diastolic. If the pulmonary artery is much dilated, the dullness at the base may extend to the second rib. The murmur of pulmonic regurgitation is diastolic in time, loudest at the second left interspace and is transmitted down the sternum. According to Bernhardt it is loudest during expiration.

Systolic intensification of the inspiratory murmur (Gerhardt's "audible capillary pulse") may be present but is not distinctive of pulmonic insufficiency. The murmur of pulmonary regurgitation may appear and disappear at times while under treatment (Pawinski).

I have in a few instances heard a diastolic murmur appear at the second left interspace in cases of valvular disease of the left heart and in cases of pulmonary fibrosis. These murmurs were conveyed down the sternum and were followed by signs of dilatation of the left ventricle. As they could not be regarded as cases of tricuspid stenosis—especially in those instances where mitral disease was absent—they were probably cases of relative pulmonic insufficiency, though opportunity for a post mortem test of the valves was not had.

Tricuspid Stenosis. This lesion is very rare. According to Strumpell its occurrence is so rare as to be of no practical importance.¹ It occurs more frequently in women than in men. About seventy-five per cent. of the recorded cases were in women, which Leudet thinks may be owing to the puerperal state. Tricuspid stenosis is usually associated with some other valvular lesion.² The most frequent association is mitral lesion. The next is mitral and aortic lesions (usually stenosis).

Uncombined tricuspid stenosis does occur, however, as is proved by Leudet's series.* About fifty per cent. of the cases are due to rheumatism (Fenwick, Leudet), though Rosenstein and Peacock consider all cases as being of congenital origin.

Tricuspid stenosis may be congenital or acquired. The congenital form is usually associated with defects of the septum ventriculorum, patent foramen ovale and ductus Botalli, or pulmonary stenosis. In all cases of tricuspid stenosis there is usually some regurgitation. With marked stenosis the right ventricle may be small even though mitral

¹ Over one hundred and fifty cases are now on record supported by autopsy.

² According to Rosenstein, no case of tricuspid stenosis uncombined with other lesions is recorded. All of the cases collected by Fenwick show combined lesions.

*One hundred and fourteen cases of tricuspid stenosis, in eleven of which there was no associated lesion.

stenosis be present, though as a rule it is enlarged, as is the heart generally, from associated lesions. The right auricle is usually enlarged, it may be greatly so, from hypertrophy and dilatation. While one or two cases of tricuspid stenosis have reached an age above fifty years, the majority die early. Over thirty per cent. die between twenty and thirty years of age.

The subjective symptoms of tricuspid stenosis are not distinctive. Cyanosis is generally present, as is dyspnoea, which may be severe. Cardiac palpitation and arrhythmia may be present. More or less marked evidence of venous stasis and oedema will occur. Presystolic venous pulsation is present, with at times a systolic pulsation from regurgitation. Systolic pulsation in the liver may be present.

Physical examination will show enlargement of the heart, which is usually general. There is nothing distinctive about the enlargement unless unusually high extension of the base dullness on the right would indicate enlargement of the right auricle. The pulse of tricuspid stenosis is feeble and may be rapid and arrhythmic. Thrills may be felt at times. The murmur of tricuspid stenosis is diastolic. It is not constant or uniform in character, quality or intensity. According to Walshe, Flint and Hope, it is very rarely heard. Potain, Paul and others do not recognize its authenticity. Its point of maximum intensity is over the tricuspid area (beneath the sternum at the level of the fourth rib), and according to Grawitz is particularly diagnostic if heard at the right edge of the sternum over the fifth or sixth cartilages. It is a difficult matter to outline the features of such a murmur clearly, as associated murmurs, as well as arrhythmic conditions or tachycardia, will interfere with its recognition. In some cases the only murmur recorded in the tricuspid area was a systolic one. Stokes, Duroziez, Fenwick, Duckworth and others say the murmur is diastolic. Hayden thinks that an open area between the characteristic situation of mitral and tricuspid diastolic murmurs, in which no murmur is heard, serves to distinguish and diagnose the two murmurs.

The diagnosis of tricuspid stenosis has seldom been made *intra vitam* (six times in one hundred and fourteen

cases). The most characteristic sign is a diastolic murmur heard over the lower portion of the sternum, which can be differentiated from a mitral murmur. According to Shattuck, in a female patient with mitral or aortic disease and rheumatic history, with recurrent or prolonged venous stasis, tricuspid stenosis may be inferred whether a presystolic murmur is heard or not.

The following history is from a case of acquired tricuspid stenosis in connection with mitral stenosis.

Woman aged 24. Rheumatic history. Complains of some cough, dyspnoea, cardiac palpitation, præcordial pain, dizziness and faintness, and at times slight cyanosis. Examination shows general enlargement of the heart, especially of the right ventricle. The pulse is rapid and arrhythmic, feeble and of low tension. A mitral thrill in mitral area; a basic, systolic thrill is also felt. Slight presystolic, venous pulsation just above sternum. Presystolic murmur in mitral area. Over right edge of lower part of sternum can be heard a diastolic murmur coincident with, but not quite as long as the mitral murmur. One-half inch to the left of the sternum, about the fifth interspace, there is an area where the murmur is very faint, but at no point between the mitral and tricuspid areas is it entirely absent. There is moderate congestion of the liver and stomach also moderate oedema of the legs.

While tricuspid stenosis was suspected in this case it was impossible to separate the murmurs, and the general symptoms were not incompatible with the history of advanced mitral stenosis. Autopsy subsequently proved the existence of tricuspid and mitral stenosis. The total absence of any symptoms during the patient's early life previous to rheumatism, together with the absence of any congenital defects or malformations of the heart would indicate the acquired nature of the lesion.

Tricuspid Regurgitation. As a primary lesion tricuspid regurgitation is rare. Secondary to those conditions which raise the pressure in the right ventricle it is very common. These conditions are chiefly valvular diseases of the left heart and particularly mitral lesions, and chronic diseases of the lungs and pleuræ (according to Balfour bronchitis ranks next to mitral lesion as a cause of tricuspid regurgitation). The occurrence of secondary tricuspid regurgitation

marks the development of asystolism of the right ventricle. When it occurs from overtaking the heart in connection with a primary mitral lesion it may be recovered from, but when mitral insufficiency secondary to aortic lesion is followed by tricuspid regurgitation, the heart muscle is usually too weak to allow of any recuperation.

Valvulitis at the tricuspid opening is very rare in the adult. Ulcerative endocarditis is very rare at these valves. The morbid processes are not essentially different from those incident to valvulitis of the left heart. The effect of tricuspid regurgitation is to cause dilatation of the right auricle. In primary tricuspid valvulitis there may occur some hypertrophy of the right auricle, but in secondary regurgitation hypertrophy will not occur. The backward pressure of the regurgitant current is transmitted to the veins entering the right auricle. In the veins tributary to the inferior vena cava having no valves, the backward pressure is manifested. Enlargement of the liver may occur. In long continued cases "nutmeg" liver may develop. Enlargement of the spleen, congestion of the stomach, hæmorrhoids and induration of the kidneys will occur.

The subjective signs of tricuspid regurgitation are intermingled with those of the associated lesions in such a manner that it is difficult to separate them. There will be dyspnoea, orthopnoea, cardiac palpitation and arrhythmia, headache, vertigo and dizziness from passive cerebral hyperæmia. Gastric disturbances are sometimes severe. The skin becomes a dingy yellow. The kidney secretion is scanty and high-colored. Constipation may be obstinate and there will be dropsy with or without ascites.*

Physical examination usually shows general enlargement of the heart which may be very great in some cases of secondary tricuspid regurgitation. Extension of dullness towards the right nipple and upward at the right base indicates enlargement of the right side. Systolic pulsation in the liver may be seen or felt. (This must be distinguished from the epigastric pulsation due to the impulse of the enlarged right ventricle). Epigastric pulsation is usually

*Broadbent thinks that œdema and cyanosis in connection with mitral stenosis is indicative of tricuspid regurgitation.

present. Pulsation in the jugular veins is an important symptom. It may not be present at first unless the valves in the veins are situated an inch or so above the mouth of the vein, in which case pulsation may be seen just above the sternum while the valves are yet competent. Later with incompetent valves pulsation of the jugulars is marked.*

The murmur of tricuspid regurgitation is systolic in time, low in pitch, blowing and soft in character, and is heard with greatest intensity at the left border of the sternum or over its lower part from the fourth to the sixth rib. It has a short direction of transmission upwards and to the right. It is seldom heard above the third rib and is not conveyed to the left. It is sometimes heard plainest over the right costo xiphoid notch. This murmur together with epigastric pulsation and jugular pulsation constitutes the chief evidence of tricuspid regurgitation. While tricuspid regurgitation is of great clinical importance as an evidence of right ventricular asystolism, its symptoms are so mixed with those of the causative lesion that citation of cases would be but repetition.

PROGNOSIS. No definite statements can be made relative to the prognosis of a certain lesion without knowledge of the effect on the heart chambers or muscle which the particular lesion is having, this of course, requires time. Mixed lesions are, of course, more unfavorable than single ones. Pure aortic stenosis and simple mitral regurgitation are undoubtedly the most favorable lesions. Between mitral stenosis and aortic regurgitation it is not easy to choose; different observers vary much in opinion. However, discussion on this question is useless; the variations depend on the extent and effect of the lesion, and we can only prognosticate after understanding these. When a sufficient length of time has elapsed to show that there is little or no change taking place in the physical state of the heart as a result of the lesion, then if the dynamical condition of the heart muscle is good and the patient tractable and understands his limitations relative to physical effort, there is no reason why his life expectancy—other things being equal—should not be equal to any other individual.

*True jugular pulsation is distinguished from false or transmitted motion by pressing on the vein. If the pulsation is from the right auricle it continues between the finger and the heart and ceases above the finger.



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Ext. Ignatia Amara ¼ gr. Med. Prop.—Nerve Sedative. Dose, 1 to 2.	Podophyllin, ¼ gr. { Ext. Hyoscyamia, ½ gr. { Ext. Nux Vomica, 1-16 gr. }
Ext. Nux Vomica ¼ and ½ gr. Med. Prop.—Nerve Stimulant. Dose, 1 to 3.	Strychnia 1-16, 1-20, 1-30, 1-32, 1-40 and 1-60 gr. Med. Prop.—Nerve Stimulant and Tonic. Dose, 1 to 3.
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Notes and Comments.

An exceedingly interesting and important condition is that shown by the mortality statistics of England with reference to cancer. The figures show that there has been a most pronounced increase in the death rate from this disease during the past fifty years. In 1840 cancer caused 2,786 deaths in England, being 1 in 129 of the total mortality, or 177 per million of living people. In 1894 the same disease caused 21,422 deaths, the proportion being then 1 in 23 of the total mortality, or 713 per million of the living. This represents an increase, in a little over fifty years, of more than four-fold in proportion to the population; and in proportion to the total deaths from all causes, the increase is more than five-fold for the same period of time. In connection with these observations it has also been shown that the increase in the prevalence of cancerous disease has been almost entirely among the well-to-do class, the artisan and lower classes, in which tuberculosis is more frequently found, escaping. This fact is particularly well illustrated in London, the better part of the city to the west showing the increase, while it is not shown in the densely populated, unsanitary districts of East London.

Why sanitary surroundings, a due regard of the best recognized laws of health, and better food supplies should apparently favor the development of cancer is at present inexplicable.

* *

Lawson Tait, in a letter to the *Medical Record* (Jan. 8,) and called out by some statistics published by Dr. T. Gail-
lard Thomas wherein the mortality rate in abdominal sections in seven selected hospitals in America varied from 25 per cent. down to 15.03 per cent., very caustically condemns such a showing. Tait does not mince words at all, practically characterizing such a mortality as murderous. He regards such a high death rate as absolutely preventable in

properly constructed and conducted hospitals. He selects for comparison one of his bad years (1893) and says:—"In 1893 the abdominal sections numbered" (in the Birmingham and Midland Hospital for Women) "176 (against 153 in New York in 1894), with a mortality of 6.2 against 15.03 per cent. in the New York Woman's Hospital."

But this was a bad year in Tait's work, according to his statement, and does not represent the minimum mortality, or what he regards as the inevitable mortality in abdominal section. He goes on to say:—"Another table is given of 1,350 cases of abdominal section, performed almost entirely by Dr. Savage and myself, from 1884 to 1893, with 75 deaths—a mortality of 5.5 per cent." While this is getting the mortality down very low yet he maintains that he does still better; for instance, taking six good years, viz., 1885, 1886, 1887, 1888, 1891 and 1892 there were 799 cases with a death rate of 3.5 per cent., and he says:—"I think this latter" (the 3.5 per cent. mortality) "is nearer the inevitable, and that a higher mortality than that is due to causes entirely removable." Tait regards the secret of this success to be:—"the absolute segregation of our patients and close attention to every detail."

* *

Apropos to the above comes the record of Dr. A. Lapthorn Smith, of Montreal, as given by him in the January issue of the *Am. Jour. of Obstetrics* under the caption *Experience of Two Hundred and Forty-nine Abdominal Sections*. Dr. Smith has made that many abdominal sections during the last eight years, and a tabulation of the mortality following his work is given thus:—

In 1890	4	operations	0	deaths	
In 1891	8	"	1	"	or 12 per cent.
In 1892	12	"	2	"	" 17 " "
In 1893	23	"	3	"	" 13 " "
In 1894	39	"	3	"	" 8 " "
In 1895	57	"	2	"	" 3½ " "
In 1896	60	"	2	"	" 3½ " "
In 1897	46	"	4	"	" 9 " "

Dr. Smith attributes the increase in the mortality of 1897 to the fact that he operated on only the most serious

cases, some of these being cases that were really inoperable—had been refused by other operators.

* * *

Dr. J. C. Irish of Lowell, Mass., chronicles (*Bos. Med. & Surg. Jour.*, Jan. 6) four cases of appendicitis in patients aged respectively 65, 76, 75 and 76. The writer remarks: "These four cases, in an approximate total of forty seen by me within this year, may be a rather unique experience; still they establish the fact, if not established already, that appendicitis may occur in very old people. To a certain extent they tend to show that the disease is not so very infrequent among patients of very advanced age."

* * *

Justification for the spaying of women does obtain in some cases, and an instance recently reported in an English medical periodical of a woman who was delivered in her ninth pregnancy by Cæsarean section after eight craniotomies would seem to belong to the class calling for such operation. Such a case is passing strange; first, that a woman could pass through eight craniotomies upon her unborn offspring and, second, that she should submit, or be forced to submit, to repeated dangers of so radical a nature. Such a case surely represents the very apotheosis of the procreative instinct.

* * *

The case of complete removal of the stomach and recovery of the patient, operated on by Schlatter, of Zurich, reported by Wendt, of New York City, and over which the *Medical Record* has made such ado, does not appear to show very much after all. We cannot controvert the statement that it is the first successful instance of complete gastrectomy; although Langenbuch, of Berlin, reported two cases of gastrectomy in 1894 with a successful issue in one of the cases. It may be, as referred to by Wendt, and as acknowledged by Langenbuch, that a small "cuff" of tissue remained at one or both extremities of the stomach; yet *practically* there was complete removal of the stomach in so far as the influence upon the patient, the physiological principles involved, and the skill of the operator are considered. The only difference is the presence or absence of a few square

inches of tissue. Even as far back as 1883 Connor, of Cincinnati, performed a complete gastrectomy upon a man with gastric carcinoma, the patient dying before the completion of the operation. This shows that the idea and purpose is not at all new. In the Schlatter case, as Fenger may be quoted as saying, "There was no doubt, from long-continued downward dragging of a tumorous stomach, such a stretching and relaxation of the œsophagus as made it possible to draw the stomach well out of the abdominal wound and permit its entire resection. The same condition of relaxed œsophageal tissue also permitted of it being reached easily in suturing it to the loop of small intestine, as was done. The extirpation of a carcinoma of the stomach is always a question of mechanics, and the mechanical conditions must be exceptionably favorable in a given case in order that the œsophagus, and not a portion of the cardiac end of the stomach, shall be one of the approximating ends."

Book Reviews.

A TEXT-BOOK OF THE DISEASES OF WOMEN. By HENRY J GARRIGUES, A. M., M. D., Professor of Gynecology and Obstetrics in the New York School of Clinical Medicine; Gynecologist to St. Mark's Hospital in New York City; Gynecologist to the German Dispensary Hospital, New York City; Ex-President of the German Medical Society of the City of New York; Consulting Obstetric Surgeon to the New York Maternity Hospital, etc. Second Edition. Philadelphia: W. B. Saunders.

This work has deservedly reached a second edition, for it is especially fitted for the student and general practitioner, and that which is common stock is presented in such attractive style as to make it a pleasant reminder of what we already know. Dipping into the volume at random, the practical, common-sense way of the author's looking at things and his excellent talent of describing them, causes one to turn back to begin the chapter and read from its commencement.

The author in his preface to this second edition says.

"Parts of the text and some of the illustrations that seemed antiquated or of minor importance, have been omitted, and considerable new material has been incorporated. The whole surgical treatment of uterine fibroid and cancer has been rewritten and much simplified. Vaginal section has been placed on equal terms with abdominal section. 'Descriptions of the chief methods employed in Intestinal Surgery' have been added to the appendix."

The work is up to date, sufficiently explicit without prolixity, covering the whole ground of gynecology. The book is thoroughly tabulated and with an excellent index, renders it easy to turn to any subject treated. It is copiously illustrated with 335 plain and colored engravings.

The work is an entertaining book, written in a style peculiarly his own it is especially valuable, as it is a reflex of the ripe experience of the author in dealing with many subjects from an individual standpoint.

G. E. R.

TRAUMATIC INJURIES OF THE BRAIN AND ITS MEMBRANES, With a Special Study of Pistol Shot Wounds of the Head in their Medico-Legal and Surgical Relations. By CHARLES PHELPS, M. D., Surgeon to Bellevue and St. Vincent's Hospitals. With Forty-nine Illustrations. Published by D. Appleton & Co.

There is so much in this work that is new that a synopsis would be preferable to a review.

Part I opens with forty-one pages devoted to a preliminary consideration of cranial fractures, the symptomatology, diagnosis, prognosis and treatment being given. The author draws attention to the fact that the symptoms of intra-cranial lesion must not be mistaken for those of fracture without lesion. Fractures of the vault are to be recognized by tactile or visual sense, aided by incision if doubt exists or there is suspicion of intra-cranial complications. The author holds, in substance, that all fractures, whether simple or compound, are of little moment, provided there are no complications; that their prognosis is the prognosis of their complications. His views in regard to the treatment of fractures of the vault are about as follows: "There are simple uncomplicated fissures which are often undiscovered and always unimportant and which are better left without interference; but complicated fissured, and comminuted, depressed and punctured fractures, even without apparent complications, demand complete exploration, operative reduction to the simplest possible form, and rigid aseptic methods in treatment of the wound. Even a doubt in the presence of intra cranial complications should be resolved by making direct inspection possible." The author states that there are no conceivable dangers to this treatment. This statement is probably a little extreme, as no surgeon can, at all times, be certain of an aseptic wound. The author is of the opinion that the inner table is often extensively comminuted, with frequent serious laceration of the brain in cases where the external table is only simply fissured or slightly depressed. I had thought that this view was not generally held of late, nor supported by clinical experience.

In Chapter I. the subject of pathology is considered. Hæmorrhage is divided into epidural, pial and cortical, con-

siderable space being devoted to contusions which may be cerebral or meningeal, limited or diffused. The visible anatomical changes in brain contusion are hyperæmia, formation of minute thrombi, the presence of punctate extravasations, and a more or less distinct œdema.

The author states, page 58, "The impossibility of accepting a functional disorder as adequate explanation of the group of symptoms which has been collectively known as concussion resides in a pure assumption based on cases which recover, and contradicted by the necropsic appearances observed in those which are fatal. Structural alterations have been denied, not only without reason, but in spite of positive evidence."

This section devoted to pathology is certainly one of great interest and I believe of inestimable value. The profession has seemingly gone too far regarding the neuroses which follow cerebral or spinal injury to be so often functional in character, and the victims so often to be simulators. The subject of lacerations of the brain receives careful attention. Usually the laceration was confined to the frontal or temporal lobes and was commonly produced at points directly opposite that at which force had been applied.

Chapter II. is devoted to symptomatology. His second sentence is as follows: "It is necessary at the outset to recognize the fact that, without exception they (the symptoms) result from demonstrable organic change."

Under *Diagnosis* attention is directed to the importance of differentiating between alcoholic coma, uræmia, apoplexy and intracranial injury.

Hæmorrhage into anterior part of middle fossa will produce dilatation of corresponding pupil from pressure on third nerve. In hæmorrhage temperature is lowered, corresponding to the amount of shock. With reaction, temperature rises from one to three degrees above normal. Where the blood encroaches on the medulla, respiration is much lowered; otherwise neither respiration nor circulation are characteristically affected.

The author's remarks on the symptoms of laceration of, the brain are of great interest. He states that in laceration

after recovery from shock, pulse and respiration are about normal, while the temperature is high and the general symptoms are indicative of a most serious injury. An asymmetry in the radial pulses is indicative of intra-cranial injury. Derangement of intellect not incident to delirium, as loss of memory, defective judgment and mental decadence, indicate, in the great majority of cases, laceration of the left frontal lobe. Irregular muscular action and convulsions are most frequently due to laceration. The loss of fecal and urinary control is characteristic of laceration. The author holds that disturbances of speech are due to laceration and not to hæmorrhage, and states that the only intra-cranial lesion that he would always operate for is epidural hæmorrhage; also that a premeditated operation for subdural hæmorrhage is without adequate reason and can afford no just expectation of success.

The reviewer believes that each of these propositions is incorrect. He has previously reported a case in this magazine (*vide* CLINICAL REVIEW, Oct. 1896, p. 29) in which, as the result of a traumatism, there was rupture of a branch of the middle cerebral artery causing motor aphasia. In this case a very large clot was formed upon the pia, which, being removed by operation, a complete and permanent relief of symptoms occurred. I am unable to see why a clot upon the pia, if of sufficient size to cause symptoms, should not be removed as well as one upon the dura.

Chapter VII. is devoted to the consideration of pistol shot wounds of the head in their medico-legal relations. This chapter is the result of a large number of experiments upon the cadaver, and is more especially intended for the legal profession.

Chapter VIII. is devoted to the surgical relations of pistol shot wounds of the head. In treatment the author favors interference, asepticizing wound, removing spicula of bone and, if possible, the bullet.

The remainder of the work is devoted to a consideration of the condensed histories of three hundred intra-cranial traumatisms, in two hundred and twenty-five of which the cranial lesions were verified by necropsy.

The reviewer believes this work to be one of the most valuable that has been issued for many years. The work is the product of an immense amount of painstaking investigation and is therefore highly original. Although the work is of more especial interest to the surgeon, yet it has such intrinsic value that no physician can afford to be without it. The author is inclined to be dogmatic in opinion, and in style verbose, though scholarly. In some sentences the object is so far removed from the subject that they seemingly have parted company entirely.

A. H. L.

DISEASES OF THE EYE. By EDWARD NETTLESHIP, F. R. C. S., Ophthalmic Surgeon at St. Thomas' Hospital, London; Surgeon to the Royal London (Moorfields) Ophthalmic Hospital. Revised and Edited by W. T. HOLMES SPICER, M. A., M. B., F. R. C. S., Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children. Fifth American from the Sixth English Edition. With a Supplement on Color Blindness by WILLIAM THOMSON, M. D., Emeritus Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. Handsome 12mo. of 521 pages, With Two Colored Plate and 161 Engravings. Cloth, \$2.25. Lea Brothers & Co., Publishers, Philadelphia and New York. 1897.

A work that has passed through six editions can reasonably be claimed to have merited success. As the American publisher says: "Nettleship fills a place in a literature already rich." It is essentially a compendium of ophthalmic practice. The chapters devoted to optical outlines are necessarily brief, but sufficient to call to mind one's previous knowledge of optics. The clinical division is very complete, unusually so for a compendium. The only criticism that can be offered is that the editors have seen fit to carry some of the traditions of ophthalmology into an otherwise practical work. The chapters on operations are altogether too brief for a practical guide for most of the surgical procedures here described. Here, too, they have fallen into the same error of describing operations that were long ago considered obsolete. It would seem that the space might have been used to better advantage in a fuller description of operations now in vogue.

Diseases of the Eye in Relation to General Disease (Part Third), contains very much valuable material in the way of suggestions.

The supplement consists of a practical examination of railroad employes as to color blindness, acuteness of vision and hearing by Dr. Wm. Thompson. This contains a concise statement of methods—a most perfect and valuable aid to physicians engaged in railroad work.

This is by far the best student's text-book on the subject of ophthalmology yet published, and is so conveniently and concisely arranged that the reader can get a good working picture of the subjects treated.

J. E. C.

A PRACTICAL TREATISE ON SEXUAL DISORDERS OF THE MALE AND FEMALE. By ROBERT W. TAYLOR, M. D., Clinical Professor of Venereal Diseases in the College of Physicians and Surgeons, New York. In One Handsome Octavo Volume, of 448 Pages, with 73 Illustrations, and 8 Plates in Color and Monochrome. Cloth, \$3.00, net. Lea Brothers & Co., New York and Philadelphia.

A new book by this distinguished author naturally excites interest, and a careful review shows many features of great value.

The anatomy, structure and physiology of the male sexual apparatus and the nature and composition of the seminal fluid are considered in detail and in a masterly manner. The description is exhaustive and its value is increased by the insertion of many original plates.

Impotence in the male is considered under four subdivisions, viz.: (1) Physical impotence, where brain impressions play a prominent part; (2) Symptomatic impotence, where some damage to one or more portions of the sexual sphere is the underlying cause and the impotence is a symptom thereof; (3) Atonic impotence, where there is an impairment of the sexually controlling parts of the nervous system, owing to various depressing causes, and (4) Organic impotence, where structural defect or disease so disturbs or cripples the penis that intromission is interfered with or rendered impossible.

Sterility is discussed in relation to azoöspERMAtism, where the sexual act is properly performed but the semen is sterile, and to aspermAtism, where there is no ejaculation of semen, where its quantity is deficient or where its emission is imperfect or impeded. Incidentally there is given a full and instructive description of the pathological conditions of the testicles, the prostate gland and the seminal vesicles.

The effects of chronic inflammation of the bulbous and prostatic urethra, stenosis and strictures are clearly explained in reference to sexual weakness and impotence, and very practical instruction is given regarding the use of sounds and deep injections.

The chronic affections of the prostate are described in full. The author's great experience in this class of cases enables him to speak with authority, and, as a result, his description is original and complete, his methods of diagnosis are satisfactorily and clearly set forth, and his consideration of the subject becomes most interesting and instructive. The colored plates which show the microscopical appearance of different prostatic secretions and illustrate cases of seminal vesiculitis, are of special value.

The effects of masturbation and sexual excesses are detailed and spermatorrhœa designated, "that old-time bug-bear of medicine," is described with reference to scientific knowledge of pathological conditions. Bennett's modification of Howe's operation for excision in cases of varicocele is recommended in preference to subcutaneous ligation.

An interesting chapter speaks of sexual worry, hypochondriasis and neurasthenia and much information of value is given in reference to these conditions as well as to the pernicious practice of conjugal onanism. The subjects of priapism, sexual erethism and sexual perversion are briefly considered without any attempt at extensive or sensational description.

That portion of the book which applies to the female is incomplete and unsatisfactory. It comprises but 67 of the 451 pages. While it is stated that in cases of sterility, the woman, in five cases out of six, is the consort at fault, but five pages are devoted to the consideration of this subject

which is admitted to be of great importance. Some of the morbid conditions incident to the condition are mentioned, and the reader is referred to the various authoritative textbooks on gynæcology for further details. The author contents himself with a description of vulvar hypertrophies, vegetations, tuberculous ulcers and a peculiar new growth, all of which, while unquestionably of interest to the dermatologist, has but incidental bearing upon the sexual disorders of the female, as we understand the definition.

D. L.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By JOHN V. SHOEMAKER, M. D., LL. D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College, Philadelphia. Third edition; revised and enlarged. New York: D. Appleton & Co., 1897.

The appearance of the third edition of Shoemaker's treatise on diseases of the skin testifies to the fact of its general popularity. Prof. Shoemaker in the preface to his first edition indicates that the work is written with the "intention of supplying the needs of the medical student and the busy physician" and his work, therefore should be judged in accordance with that standpoint. So considered, much may be said in its favor. The scope of the work is fairly comprehensive. Very few diseases that have any claim to a place in a treatise on dermatology are omitted. There is, perhaps, some repetition in the endeavor to leave nothing out, but with questions of identity and difference still unsettled as regards a number of rare cutaneous affections such repetition hardly justifies criticism. The first one hundred and twenty-five pages are given up to general considerations—symptomatology, diagnosis, pathology, etiology and treatment—and in the opinion of the reviewer this is the best part of the book. Six hundred and fifty pages are allotted to a consideration of the various diseases of the skin—space sufficient to allow of a satisfactory treatment. The usual subdivision of the subject, into hyperæmias, exudations, tumors, neuroses, etc., is followed, and the exposition is clear and definite. In the preface he disclaims any extensive reference to the literature of the subject, and yet

in the text it will be found that the bibliographical references are full and that much care has apparently been taken to give credit wherever credit is due. The last hundred pages of the book are occupied by a formulary which is a bald statement of prescriptions for various affections, without any reference to the particular indications for their use. The following may be taken as examples of these prescriptions:

“Acne.

Take of Bromide of sodium	4 drachms.
Syrup of wild cherry	3 ounces.

Dose: 1 teaspoonful in water every three hours.”

“Sycosis.

Take of Corrosive sublimate	2 grains.
Tincture of Prickley ash	6 ounces

Dose: 2 teaspoonsful in water three or four times a day.”

“Vitiligo.

Take of pyrophosphate of iron	20 grains.
Sulphate of quine	20 grains
Arsenious acid	1 grain
Extract of ignatia	2 grains

Mix and divide into 30 pills. Dose: 1 pill after meals.”

It is hard to see what end the author expects to gain by such a formulary. Granting for the sake of argument that prescriptions like the above are of use, their recommendation without reference to the indication to be met would seem to be about as scientific as the statements that bromide is good for fits, or aconite for fever, or paregoric for colic. One does not wish to bring himself to believe that the medical student or the physician, however busy, wants such information as that. In the main, however, it must be said that the therapeutics of the work is practical and suggestive. Dr. Shoemaker, however, seems to be a therapeutic optimist, and his optimism engenders a faith in the efficacy of drugs that must tax the credulity of more skeptical minds. The indiscriminate recommendation of drugs for cutaneous disturbances, particularly the recommendation on insufficient evidence of specifics, is the more deplorable in a book intended for students and general practitioners, because if there is one thing in dermatological

therapeutics that needs to be emphasized above all others, it is that diseases of the skin have to be treated along the lines of rational medical and surgical principles; and that the practitioner in treating such affections, needs, in the main, not a large armentarium of uncertain drugs, but a clear knowledge of the actions and properties of a comparatively small number of agents of well-tried and definite value.

W. A. P.

DISEASES OF THE STOMACH, Their Special Pathology, Diagnosis and Treatment, with Sections on Anatomy, Physiology, Analysis of Stomach Contents, Dietetics, Surgery of the Stomach, etc. By JOHN C. HEMMETER, M. D., Philos. D., Clinical Professor of Medicine at the Baltimore Medical College, Consultant to the Maryland General Hospital, etc. With many Illustrations, some of which are in Colors and a Lithographic Frontispiece. In Three Parts, 788 pages, \$6. Philadelphia: P. Blakiston Son & Co.

This book is an extensive work on the anatomy and physiology of the stomach, diagnostic technic, dietetics and therapeutics of gastric diseases and the clinical medicine of the stomach.

In a preface the author, after commenting on the tendency of modern medicine toward specialism, naively remarks that the stomach alone is not a sufficiently large field to constitute a genuine specialty; this notwithstanding the fact that he has furnished us with a most interesting and instructive volume of nearly eight hundred pages, confined to the consideration of this particular organ. We say interesting, instructive and practical, notwithstanding the fact that modern surgery has demonstrated the superfluity of the stomach as an organ necessary to mere physical existence. We are still a long way from believing that the valuable work of Flint, Osler, Delafield, Ewald, Kussmaul, Senator, Einhorn, Dock, Stockton and others, including our author, is unavailing effort.

The present volume is a valuable addition to the American contributions to internal medicine. The general practitioner will find much of practical value in its pages as they speak the practical knowledge only gained by clinical work and observation.

The work is in three parts: anatomy and physiology of the digestive organs—methods and technics of diagnosis; therapy and materia medica of stomach diseases; the gastric clinic.

The first part clearly defines and applies the accepted facts and theories regarding the anatomy and physiology of the stomach, and serves as a necessary introduction to the remainder of the volume. The diagnostic technic of this portion is to be commended for its clearness and conciseness. The author's observations regarding the use of the stomach tube both for diagnostic purposes and for treatment are to be endorsed. The second part is devoted to dietetics and treatment in general. The principles of dietetics, together with the practical diet lists contained in this section are of much value. There are important chapters in this section on lavage and the gastric douche; mineral waters, their uses and abuses; surgical treatment of organic gastric diseases, and on the influence of gastric diseases on other organs and metabolism. Part third—the gastric clinic—is devoted to the clinical medicine of the stomach. Besides the usual diseases there are interesting chapters on benign tumors of the stomach, tuberculosis of the stomach and syphilis of the stomach.

There are valuable diagnostic tables and numerous bibliographical lists which make the volume valuable for reference. Full credit is given to American observers for the work they have accomplished in this department of medicine. The volume is complete with an index of authors and one of subjects. It is finished in the usual good form of its publishers.

J. M. P.

Review of Clinical Literature.

Being a List of the Leading Clinical Articles of the Past Month:

Arranged Alphabetically by Title, Giving Author and Reference
MEDICINE.

Heart and Circulation in Diphtheria, Clinical Observations upon the—
H. D. Chapin, N. Y.—*Med. Rec.*, Jan. 15.

Internal Secretions, The Clinical Aspects of the—J. J. Putnam, Boston
—*Am. Jour. Med. Sci.*, Jan.

Linear Nævus, A Report of Two Cases of—P. A. Morrow, N. Y.—*N. Y. Med. Jour.*, Jan. 1.

Laryngeal Abductor Paralysis, The Clinical Significance of—F. Semon,
London—*Brit. Med. Jour.*, Jan. 1.

Malaria and its Treatment, Clinical Observation on—B. Robinson, N.
Y.—*Med. Rec.*, Jan. 46.

Post-typhoid fever—J. M. DaCosta, Phila.—*Phil. Med. Jour.*, Jan. 1.

Typhoid fever, Abrupt onset in—Wm. Pepper and A. Stengel, Phila.—
Phila. Med. Jour., Jan. 8.

Dr. Beverly Robinson says:—(*Med. Record*, Jan. 15) "It is probable that one reason why Warburg's tincture or extract is frequently efficacious in arresting attacks of malarial fever, especially in instances somewhat chronic in type, is on account of its decided action on the liver and bowels. Apart from its well known antimalarial repute, I know of one physician, lately deceased, who had a very large experience of its value and who told me that this was the manner in which he estimated it, viz., as a very important cholagogue."

SURGERY.

Fracture of the Spine in the Cervical Region, Clinical and Pathological Report of a Case of, etc.—J. W. Courtney, Boston—*Bos. Med. & Surg. Jour.*, Jan. 13.

Intestine, Inflated Rubber Cylinders for Circular Sutures of the—W. S. Halstead, Baltimore—*Phila. Med. Jour.*, Jan. 8.

Esophagus, On a Second Case of Removal of a "Pressure Pouch" of the—
—H. T. Butlin, London—*Brit. Med. Jour.*, Jan. 1.

Retroesophageal Abscess—J. P. Crozer Griffith, Phila.—*Univ. Med. Mag.*, Jan.

- Röntgen Rays, Surgical Application of the—*Am. Jour. Med. Sci.*, Jan.
 Rectum, Primary Tuberculosis of the, with Report of Cases—L. Straus,
 St. Louis—*Matheus' Quar. Jour.*, Jan.
 Septicemia Resembling Farcy, Clinical Remarks on a Peculiar Case of
 —J. M. DaCosta, Phila.—*Univ. Med. Mag.*, Jan.
 Shoulder-joint, A New Incision for Arthrectomy, Resection and for Re-
 duction of Irreducible Dislocation of the—N. Senn, Chicago.—*Phil.*
Med. Jour., Jan. 1.
 Stomach, A Unique Case of Complete Removal of the, etc.—C. Schlatter,
 Zurich—*Med. Rec.*, Dec. 25.
 Trans-peritoneal Ligation of the Iliac Arteries—T. S. K. Morton, Phila.
 —*Jour. Am. Med. Ass'n.*, Jan. 15.

Dr. W. S. Halstead, professor of surgery in the Johns Hopkins Hospital, describes a new method of circular suture of the intestine, viz., over an inflated rubber cylinder. (*Phila. Med. Jour.*, Jan. 8.) The description is well illustrated and the conclusions the writer arrives at are as follows:

1. The vermicular action of the bowel is arrested over the bag, and the stitches can, consequently, be placed at regular and proper intervals.
2. The distended bag unrolls and spreads out to a fine edge the everted raw edge of the intestine and enables the operator to place the stitches with great precision at the desired distance from this edge.
3. If a distended intestine is to be sutured to collapsed intestine (in strangulated hernia, ilius, etc.), or intestine of larger to intestine of smaller lumen (jejunum to ileum, duodenum to esophageal end of the stomach, etc.), the smaller may easily be expanded to fit the larger piece. This is perhaps the most important function of the cylinder.
4. The cylinder takes the place of at least two assistants.
5. It prevents escape of intestinal contents and hence dispenses with the injurious clamps or the fingers of assistants.
6. The entire operation, exclusive of suture of the abdominal wall, can be performed on dogs in five or six minutes, and probably in less time.
7. Very little handling of the intestine itself by the operator is necessary. The tube from bag to syringe is used as a handle to rotate and elevate the parts to be united.
8. The operation could readily be performed without a single assistant.

The results, should, I believe, be better than by any method hitherto devised.

Dr. Frederick Holme ^{**}Wiggin, of New York, utters (*Med. Rec.*, Jan. 22) some words which the general practitioner outside of the great cities where special hospital facilities have been held to be so advantageous will be greatly interested in hearing. Dr. Wiggin says, "In the early days of the decade now drawing to a close, it was generally considered to be a fact that operations within the abdominal cavity, could be performed, with a reasonable degree of safety to the patient, only when undertaken in expensively constructed special rooms attached to either public or private hospitals. But as time has gone on and our knowledge of bacteriology has increased, antiseptic surgery has been gradually replaced by aseptic work, and we have found, especially those of us whose fortune it has been to perform operations of the class under consideration in ordinary houses, that although the personal effort and responsibility are increased, abdominal operations can be performed with as little if not less danger to life in a properly prepared room in the patient's dwelling as in the best equipped modern hospital."

There are quite a number of important points this writer further gives, as follows:

1. The importance, wherever practicable, of prolonged preparatory treatment of patients about to undergo an abdominal operation.

2. The importance of the administration of cathartics in the early part of this period, followed by large enemas for the purpose of cleansing the intestinal tract.

3. The importance of keeping a record of the body temperature, respirations, and pulse rate, for several days in advance of the operation, and of making a final examination of the urine.

4. The necessity in the female of arranging to have the operation performed a few days after the menstrual period, and the cleansing of the vagina, even when it is intended that the operation shall be by the abdominal route only.

5. The administration of a small quantity of peptonized

food (one ounce) containing stimulants, two hours before giving the anæsthetic, for the purpose of lessening the tendency to nausea and vomiting after the recovery of consciousness.

6. The necessity of the anæsthetic being given by an experienced physician, and in the smallest possible quantity.

7. The necessity of protecting the patient's body properly with clothing and blankets during the operation.

8. The advantage of stimulating the pulse before the heart has become much exhausted, and of using intravenous saline injections before the radial pulse has become extinct.

9. The leaving in the abdominal cavity after free irrigation of a quantity of hot saline solution, for the purpose of stimulating the patient, preventing (?) the formation of intestinal adhesions and lessening the danger of septic infection of the peritoneum.

10. The necessity of making the patient comfortable by change of position during the first two days of convalescence, and by the use of the rectal tube.

11. The necessity for the early administration of food in reasonable quantities and at proper intervals.

12. The necessity of withholding stimulating enemata after operations in which extensive and firm pelvic adhesions have been broken up.

13. The necessity for deliberation as to the wisdom of reopening the peritoneal cavity in a given case of supposed concealed hæmorrhage.

14. The importance of washing out the stomach as soon as the diagnosis of intestinal paresis is made, and of the persistent use of saline cathartics till the bowels move.

15. The importance of not administering cathartics to those convalescing from abdominal operations, and who are pursuing a normal course, too early or in too large doses."

OBSTETRICS.

Abdominal Sections, Experience of 249—A. Lapthorn Smith, Montreal—*Am. Jour. Obs.*, Jan.

Pregnancy, Extra-uterine, with Report of Cases—M. Price, Phila.—*Jour. Am. Med. Assn.*, Dec. 25.

Pelvic Inflammatory Disease, Two Cases of in which the use of Murphy's Button became Necessary—J. M. Baldy, Phila.—*Am. Jour. Obs.*, Jan.

Uterus, The Infantile—I. S. Stone, Washington—*Am. Jour. Obs.*, Jan.
 Uterus, The Surgical Treatment of Fibroid Tumors of the—A. H. Goelet, N. Y.—*Am. Jour. Obs.*, Jan.

Arguing in behalf of a conservation of the uterine appendages—the preservation of the full and complete function of the entire generative system, even when operative measures become imperative—and the work that Dr. A. Palmer Dudley has done in connection therewith, it is stated by this writer (*Am. Jour. Obs.*, Jan.):—

“My reasons for having devoted myself to such work are:

1. That I believe that no surgeon can anticipate just what effect an early induction of the menopause by ovariectomy will have upon a woman's nervous system. Some it will affect in one way, some in another; some will put on flesh, some will lose it; some will be cheerful and contented, others will be melancholy. In many cases the domestic relations are destroyed by the knowledge of the husband or wife that she is not a perfect woman, and that what every woman should have preserved, if possible, she has been deprived of.

They all suffer more or less from hot flashes, and in many cases the latter become a very troublesome condition, the heart palpitation and hot flash creating a constant fear of future evil. Many times in the past I have had my patients return to me and complain that these nervous symptoms were dreaded much more than the condition for which I did the operation, while expressing a regret that they had ever undergone the same.

Another reason for my work is a belief that pelvic surgery should not be compassed about by the opinion even of a majority of the profession; that hysterectomy is the last resort in order to effect a cure. We must progress, if possible, for the design of surgery from the beginning was to save and not to mutilate the human body. This should be constantly borne in mind by every fair-minded surgeon, and I predict that if any advance is made during the next ten years it will be along this line of conservative surgery upon the appendages.”

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NO. 6.

SURGICAL CLINIC AT COOK COUNTY HOSPITAL;

Service of Albert I. Bouffleur, M. D., *Professor of Anatomy and Clinical Surgery, Northwestern University Woman's Medical School, Demonstrator of Operative Surgery, Rush Medical College, Chicago.*

CASE I. *Ulcer of leg; carcinoma; amputation.* This patient is 68 years of age and a laborer by occupation. He informs us that he has had an ulcer on the left leg for about forty years and for thirty years it has not been healed. In addition to the ulcer on the leg he has had an ulcer of varying size upon the instep for several years. Up to about six months ago the ulcer on the leg was flat, irregular in outline and gave rise to a slight discharge of pus. About six months ago he noticed that the center of the ulcer was growing and that soon thereafter there was a prominent elevation of the whole ulcer.

It has gradually but continuously grown up to the present time; the enlargement during the past six weeks having been especially noticeable. Concurrent with this rapid growth he noticed enlargement of the swelling in his groin, which had been there for years. Upon examination we find an irregular, ulcerated growth, the size of one-half of an orange, on the anterior inner aspect of the leg. The growth is very firm and is intimately connected with the internal surface of the tibia. Some portions of it are dark while

others are of a light pinkish hue. The skin surrounding the ulcer is very hard and adherent to deeper tissues while for two to three inches about it the skin is generally covered by a thick, dirty crust; the skin beneath being inflamed. The discharge is profuse and very offensive. The skin below the ulcer is of a bluish-purple hue, very firm and healthy; presents the typical appearance of an old varicose leg. On the dorsum of the foot there is a small ulcer about one-half inch in diameter which is superficial in character and surrounded by scar tissue, which is in many places drawn up into distinct folds giving the appearance as if the toes were cleft up to the middle of the instep. There is a distinctly palpable enlargement in the left groin.

The history of this case has undoubtedly been primarily a varicose condition of the veins, followed by ulcer of the leg which has been persistent for over thirty years. The varicosity with inflammation and resultant induration of the leg has resulted in a mechanical obstruction to the return circulation which finally compromised the circulation of the foot to the degree of causing death of the part, thus forming an ulcer of the instep which has persisted for six years. The size and location of both ulcers have varied with the local conditions incident to variations in the local circulation and consequent nutrition thereof. As the last phase of the case we find a condition of carcinoma developing in the old ulcer, possibly beginning in the cicatrix beneath it. The glandular enlargement which had been noticed for years was undoubtedly due to a regional infection from the infected ulcer. The noticeable growth within the past two or three months is readily explained by the development of the carcinoma in the leg with regional infection of the glands therefrom. This clinical variety of carcinoma is followed by glandular involvement very late in its course.

The occurrence of carcinoma in old scars and especially ulcers is readily understood when we recall the fact that carcinoma is generally conceded to develop from embryonal cells which are present in all stages of development in and about an old ulcer, and especially so when we remember that the source of nutrition of these cells is being constantly in-

terferred with by the mechanical effects of the varicosities above and the constricting effects of the large cicatrix beneath and all around. The conditions would seem to illustrate Woodhead's theory of deficient nutrition exceptionally well.

A small section has been removed from this growth and prepared for your observation under the microscope. The field presents one of the most typical pictures of epithelial nests and flat epithelial infiltration which you will ever have the privilege of studying.

Our diagnosis then is epithelioma occurring in an old ulcerating scar with secondary glandular carcinoma developing in the inguinal glands which had formerly been the seat of a chronic adenitis.

The prognosis in a man 68 years of age is at best bad, and it is especially so in this case on account of his evident low vitality and the marked glandular involvement, which probably indicates that other deeper inaccessible glands are also involved.

Local treatment of any sort is useless in such a case. If the tumor was superficial we could excise it and the glands as a primary operation and if it returned, resort to more radical measures later. Here the bone even is involved and therefore nothing short of amputation of the limb at or above the knee joint can be considered rational.

Shall we amputate at or above the knee? By general consensus of opinion and under favorable circumstances we would say above the knee—preferably by the Gritti or Gritti-Stokes method—but in this case I believe the conditions justify a disarticulation. Our patient is a decrepit, poor, old man. He will not need a limb long at best, and if he should be able to use an artificial leg he would be unable to supply himself with a costly one. His feebleness also impresses us with the advisability of minimizing the shock and the time of operation. By making a Stephen Smith amputation of the knee, thus securing a stump the end of which will be free from a cicatrix and by saving the semi-lunar cartilages I believe he will be able to wear a peg leg which will an-

swer every purpose for his remaining years, which at best will be very few.

As we make the incision you will note that it is nearly a circular one, one inch below the tubercle of the tibia with the posterior part extending up into the popliteal space, the ends coming together at the upper part of the space. The joint is readily opened and the amputation quickly effected, leaving the semi-lunar cartilages on the femur. The vessels are secured by double catgut ligatures. The nerves are resected high up. The quadriceps muscle taking its origin above the proximal joint—the hip—we anchor its tendon into the semi-lunar cartilage. The wound is sutured with silk worn gut and as we complete it you will note that the line of suture is in line with the posterior aspect of the thigh, the lower end being below the end of the bone but with a surplus amount of skin. We place a small gauze drain in for twenty-four hours.

As this cicatrix contracts we will find that it will occupy a position entirely behind the stump and between the condyles, and that the end will be entirely free from cicatrix.

This is certainly an ideal method for disarticulation at the knee joint as it enables me to carry out all the principles and details of a perfect operation. The glands in the groin are also carefully dissected out. The limb is placed upon a well padded splint merely to secure quietude for the stump during the process of healing.

(Patient shown two weeks later with ideal stump.)

CASE II.—*Carcinoma of stomach—Gastro-enterostomy.* This patient, C. F. B., is 34 years of age and a carpenter and fruit-grower by occupation. He informs us that he was a strong, robust man up to three months ago when he first began to have some pain in the epigastric region with an occasional attack of vomiting. The pain is experienced only before and during the act of vomiting. The character of the vomitus depends upon the food, but on one occasion he noticed some blood. The vomiting has occurred about twice a day and usually about two hours after eating. He has been unable to eat solid food for some weeks. During the past six weeks he has been losing flesh rapidly. Upon examination

of the patient we find him to be poorly nourished and cachectic with heart, lungs and eyes apparently normal. In the epigastrium we detect a movable swelling about the size of one's fist most prominent to the right of the median line. Tenderness is evinced in this region. Liver dullness not increased and spleen is not palpable. The external lymphatic glands are not enlarged.

The time and regularity of the vomiting indicate an obstruction at the pylorus, while the character of the vomitus and the rapidity with which the emaciation has occurred, and with it the cachexia, indicate a malignant process. The presence of the well defined tumor in the pyloric region assists us in making a positive diagnosis.

Upon the application of Boas' test to the stomach contents the reaction for hydrochloric acid is not manifested. The fluid is neutral. Microscopic examination shows wheat starch, yeast cells and columnar epithelium.

The treatment of such a case is at best unsatisfactory as the result is practically uniformly bad. The removal of the pylorus, and even considerable portions of the stomach, has been successfully performed and is recognized as a justifiable operation within certain limits, but the mortality of the procedure is very great and the beneficial influences are, except in very rare cases, but transitory; the patient ultimately succumbing to a return of the original malady in the stomach or adjacent viscera. The rapidity of the growth and marked cachexia would indicate that in all probability pylorectomy would not be justified in this case. Should it prove to be inadvisable we will then perform a gastro-enterostomy in the hope of relieving his distressing symptoms and to prevent his dying of starvation.

Prof. Senn has considerably examined this patient and has expressed the opinion that an exploratory coeliotomy should be performed with a view of performing a pylorectomy or a gastro-enterostomy. As we expect to operate upon the stomach chloroform will be the best anæsthetic, since less will be required and the excessive production of mucous and the vomiting incident to the use of ether will be avoided.

This patient takes an unusual amount of chloroform for

one in his debilitated condition and just as we open the abdomen his face becomes blanched and respirations cease.

The means by which we have successfully combatted the serious conditions present were; moderate inversion, extension of jaw, withdrawal of tongue and steady artificial respiration. The patient having been given one-tenth grain of strychnia sulphate hypodermatically and allowed to inhale the vapors of aquæ ammonia for a moment at a time. After fifteen minutes spent in resuscitation we are able to proceed.

We find the tumor to be about the size of the fist anteriorly and to involve the pylorus and adjacent part of stomach wall, with extensive involvement of the posterior surface and of the glands of the lesser omentum. The glandular involvement precludes the advisability of an attempt at pylorotomy as it would be useless and with a patient in his condition operations of even questionable benefit are to be avoided.

The next best procedure is to connect the stomach with the intestine below the obstruction—gastro-enterostomy. The dangers and futility of pylorotomy are so great that many prominent operators believe gastro-enterostomy to be the only operation for pyloric carcinoma. It however appears to be rational, that a small tumor of the pylorus unattended by glandular involvement should be removed and quite as much expected from its removal as that of a similar tumor in any other part of the alimentary tract.

We seize a loop of the intestine and make sure that it is the jejunum and at a point about fifteen inches below the duodenum we insert half of a Murphy button and place the other in the posterior and under surface of the stomach which will favor the passage of the food and also of the button into the intestinal tract. The fact that with this device one can complete the operation in about ten minutes, enables one to perform it upon patients who could not stand the prolonged method by suturing. Some firm, absorbable substance for the construction of buttons is needed. The metallic buttons do occasionally drop back into the stomach instead of into the intestine.

The intestine was turned up over the transverse colon

and the continuity of the peristalsis assured by placing the lower portion to the right. When the mesenteric attachment to the abdominal wall is remembered there need never be any doubt as to which is the upper or lower end of the intestine.

[The patient was nourished by mouth from the first, liquids only being allowed for six days then gruels and after the twelfth day light solids. Patient gained rapidly in weight and strength but tumor continued to enlarge during the next four weeks when he left for Michigan. The button had not been passed. The disease will probably soon destroy the unfortunate man.]

CASE III.—*Dislocation of shoulder—No history of trauma.* This man is 39 years of age and a printer by occupation. He states that about four weeks before admission to the hospital he retired as usual but on awakening in the morning was unable to move right arm without experiencing excruciating pain. After a few days he was able to use it some, but only slightly.

He insists that he is not aware of having sustained any injury and is sure that he was in no way incapacitated from knowing all about his actions. While he is in the habit of drinking some liquor it is always in moderation and on that particular day he thinks he had taken only one drink.

Upon inspection we find the characteristic appearance of a forward dislocation of the shoulder. The rotundity of the shoulder is absent, the deltoid making nearly a vertical line from the acromion process downward; the shoulder is narrower than the opposite one, and the upper end of the humerus is displaced inward against the thorax, its axis being in a line with the coracoid process. Upon manipulation we find a concavity beneath the acromion process with a firm swelling in the axilla which moves with the humerus on rotation. The movements of the shoulder joint are greatly restricted.

In attempting to apply Dugas' test for displacement of the head of the humerus, we are unable to place the hand upon the opposite shoulder. Whenever you are able to place the hand upon the opposite shoulder and depress the

elbow into contact with the chest you can feel assured that the head of the humerus is in place, as was so well pointed out by Dugas.

You will observe that there is an absence of any discoloration about the shoulder but that it is distinctly swollen next to the chest. The head of the bone is not entirely internal to the coracoid process but is immediately below the process which seems to rest upon the anatomical neck. It is a case of intra-coracoid dislocation of the shoulder.

With the patient thoroughly anæsthetized we begin to break up the adhesions by alternating internal and external rotation. As over four weeks have elapsed we would naturally have very firm adhesions about the head of the bone and the socket. They are so firm that all of you can readily hear them snap as we continue the forced manipulation.

You will observe that we do not make forcible rotation with the arm raised or at right angles as there is considerable danger of lacerating the blood vessels and nerves when stretched over the head of the humerus. The firm adhesions in and about the vessels render injury to them more likely to occur, but as there has not been any œdema of the arm the cicatricial tissue has probably not included the vessels in this case.

Having rendered the head of the humerus free we now apply the rule to which I have so frequently called your attention, viz., place the limb in the position which usually characterizes it at the moment of luxation and reverse the force. The principle being to relax the untorn portion of the capsular ligament, when, if the cavity be free, reduction is usually readily effected. In this case the glenoid cavity is filled by cicatricial tissue which interferes somewhat with the replacement of the head of the humerus.

By outward and slightly upward extension we are able to relax the untorn ligament and to bring the head of the bone opposite the fossa and by filling the axilla with an assistant's fist we are enabled to effect a reduction by carrying the elbow downward and across the chest.

A Velpeau bandage will now be applied to retain the limb in its reduced position.

This is, from an etiological standpoint, a unique case, as there has been no recollection of a traumatism and none of the external evidences which usually follow a traumatic dislocation of the shoulder joint.

(This patient became very nervous upon recovering from the anæsthetic and for several days he was threatened with delirium tremens but gradually recovered from the condition under digitalis and bromides. This part of his history might lead us to suppose that his statements as to sobriety on the day preceding his discovery of the condition are not to be positively relied upon and likewise the want of any knowledge of a trauma accounted for.)

CASE IV. *Epiphyseal fracture, lower end of femur.* This patient is presented for the purpose of a diagnosis. While the students are examining it I will give you some of the history.

This lad, 15 years of age, was admitted to the service of one of my colleagues in the hospital about two weeks since with the following history. About one-half hour before admission he was running and attempted to step over a horizontal bar such as usually surrounds a lawn. In doing so he struck the anterior part of his leg, just below the knee, against the bar. The bar was somewhere about 15 to 18 inches above the ground. He took a few steps after the injury, when he fell to the ground and was picked up and brought to the hospital.

The records show that at the time of his admission there was considerable swelling of the knee which was fixed in a semi-flexed position and extremely tender. Several ecchymoses were detected over the anterior tibial region, but "no signs of fracture of the femur, patella or bones of the leg" were determined, although the "upper end of tibia was notably prominent." No positive diagnosis having been made the limb was very properly treated by means of immobilization and the application of an ice bag. This plan of treatment has resulted in the reduction of the great amount of primary swelling, and we will probably be able

to make a thorough examination which is very essential to an accurate diagnosis upon which depends all rational treatment. The general appearance of the limb is that of a forward subluxation of the tibia. The two students who have just examined this case report one additional detail of the accident, viz., that his foot was on the ground practically below the bar before his knee struck the railing, and that his body fell forward over the railing after the upper part of his leg came in contact with the bar. They report that the limb is apparently normal in size and length except for some swelling about the knee. The foot is in normal position. Upon measurement there is a full inch of shortening, which is found to be in the femur. The upper part of the tibia is very prominent, and in fact, the whole of the upper part of the leg is elevated from the table while the thigh rests upon the table. The upper border of the patella tips slightly downward and a firm swelling is detected behind the condyles on the under side. The patient will not permit a thorough examination by the students or ourselves on account of the pain occasioned by any disturbance or manipulation of the parts.

With the patient anæsthetized we are able to make a more careful examination. We find the head of tibia elevated nearly one inch above the condyles, with a firm swelling behind the external condyle, which must be bone, but we are unable to determine whether it is connected with the condyles or with the shaft of the femur. A small red area surmounts the most prominent part, occasioned by pressure upon it. The upper part of shaft of femur and the hip are normal. There is no swelling of the leg below the knee and there have not been any complaints of numbness in that part. The question as to what is the matter with this patient is not an easy one to determine.

With due respect to the opinions of my associates present, who maintain that the condition is due to subluxation, I feel disposed to agree with the students who have made the qualified diagnosis of fracture of the lower end of the femur. While I believe I can detect slight motion between the condyles and the shaft, which my colleagues, however, do not

confirm, the anatomical relations alone point to that as the correct diagnosis. By closely watching the position of my finger you will observe that in tracing the anterior aspect of the femur from the anterior part of the condyle upward there is a sudden dropping in of the tissues, not very marked but positive and readily appreciated. The surface of the shaft is probably fully an inch lower than that of the condyles, while you will remember in the normal condition they are practically on the same level, and if any variance the shaft is the higher. Upon measurement we confirm over an inch of positive shortness in the right limb. The suggestion that the limb shortness is occasioned by the subluxation is impossible, since dislocation in the knee must be complete, or at least practically so, before any shortening will occur; and further, by careful measurements it is plainly confined to the femur. The positive elevation of the head of the tibia is, I believe, readily explained by the backward tilting of the condyle fragment which acts upon the principle of a hinge, and this leaves more space between the anterior parts of the condyles and the tibia, and its upper part tipping backwards forms the general swelling behind, which elevates the leg from the table. The bony prominence behind the external condyle may be attached to either fragment, but I believe it is a part of the upper, or shaft fragment, displaced behind the lower fragment.

As two weeks have elapsed since the accident we would not expect to obtain crepitus. From the location of the fracture and the age of the patient, I believe we are justified in making a diagnosis of epiphyseal separation. The condyles do not join the shaft until about the 20th year, and therefore a separation would occur more readily than either a fracture in the shaft or a dislocation of the joint. The action of the muscles at the time of the accident would also tend to produce just such a deformity.

The strong gastrocnemius which was placed under great strain in the act concerned takes its origin in the posterior parts of the condyles, while the force and the weight of the body would naturally have carried the body forward and downward while the end of the upper fragment would be

pressed behind the lower fragment. In other words the posterior ligaments of the knee-joint with the aid of the gastrocnemius were stronger than the epiphyseal attachment and therefore the separation.

By very strong extension downward and then backward over a padded block, aided by firm manipulation we are enabled to reduce the fragments completely. The normal contour, relations and movements have been restored. The limb will be dressed upon a double inclined plane so as to place the axis of the lower fragment in time with that of the upper and as the same position will relax the strong gastrocnemius muscle the reduction will be more easily retained.

There is no tendency to displacement here since reduction, extension is, therefore, not demanded but as it will tend to fix the limb in the splint and prevent muscular action we will have it applied as a matter of safety and comfort.

This would have been an interesting case for examination under the influence of the X rays. With the aid of the fluoroscope we could have observed the exact conditions and disposed of all doubt or question in a few moments.

CLINICAL LECTURES ON DISEASES OF THE
HEART, LUNGS AND PLEURA.—By Joseph M.
Patton, M. D., *Professor of Internal Medicine,*
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CHRONIC ENDOCARDITIS (Continued).

TREATMENT.—The treatment of chronic endocarditis embodies the management of the various degrees and phases of ataxia of the heart muscle into which the physical alterations of the heart which are secondary to valvular lesions eventuate. Neither the presence of chronic endocarditis, of a valvular murmur, or of physical alterations in the heart, warrant the institution of therapeutical measures unless as a result of one of these conditions there is dynamical failure of the heart muscle. A patient is not treated because he has a murmur, but because as a result of the lesion (and consequent upon the physical alterations in the heart consecutive to the lesion) there is inability of the heart as a pump. Until there is evidence of this failure of the heart muscle to cope with the demand upon it, treatment is unnecessary.

The length of time between the establishment of a chronic endocarditis and the beginning of muscular ataxia resulting therefrom, will, of course, vary greatly with the different lesions and in different individuals. I have known this period to last thirty years in an uncomplicated case of aortic stenosis.

The management of this period of compensation rests with the patient, who, if intelligent, may do much to avert subsequent trouble, or at least to postpone it if the nature of the trouble be explained and he be made to understand the limitations which apply to his individual case. A person with well compensated mitral regurgitation or aortic stenosis (the most favorable lesions) may follow any of the ordinary avocations, including those of the laboring man,

without danger, providing he be careful not to undertake anything necessitating sudden, severe or continued strain. Persons with aortic regurgitation should not undertake hard physical labor, though light outdoor employment is favorable. Indoor occupation is, as a rule, best adapted to cases of mitral stenosis, especially in changeable climates. These patients should avoid everything which increases the respiratory rate, also all mental overwork, worry or excitement, as these influences disturb the cardiac rhythm in mitral stenosis, more than in any other valvular lesion. The kinds of employment to be interdicted are those which entail exposure to cold and wet, severe muscular exertion, the breathing of impure air, the occupation of mining (because of tendency to develop anæmia), also that of sailor or soldier. Of course the element of social inequality appears here and may frustrate—and usually does—our attempts to guard against the mechanical result of overwork.

Patients with well compensated valvular lesions should be cautious about moving suddenly into very high altitudes; also about laboring or taking active exercise at an altitude much above that to which they are accustomed. Ill effects may not be felt at the time, but often are manifested subsequently. Some cases of valvular disease, even with beginning muscle failure, are benefitted by a temporary sojourn at an elevation from one to two thousand feet higher than they have been accustomed to (mitral disease, for instance, particularly regurgitation).

During the period of compensation there is, as a rule, little or no demand for treatment. In some cases of aortic disease palpitation may be troublesome. In mitral stenosis palpitation and arrhythmia may occur from nervous excitement or from gastric or abdominal disturbance. Regulation of the diet, with the administration of intestinal antiseptics where intestinal fermentation is present, will often relieve these rhythmic disturbances. Among the most useful and innocuous antiseptics are benzosol (four grains), thymol (two grains), and charcoal (three grains) in capsule. When the rhythmic disturbance is due to cardiac excitement, ten grains of sodium bromide with one drop of tincture of aconite, three or four times daily, is very useful

to quiet and regulate the heart. Strontium bromide (10 to 15 grains) may be given in place of sodium with advantage. Potassium bromide is very useful for nervous distress and restlessness incident to valvular lesions. The use of cactus, adonis, coronilla and remedies of this group in this connection is not rational. When, however, beginning cardiac weakness is associated with disturbances of rhythm, the use of these remedies may be very satisfactory, much more so, indeed, than the use of more powerful medicines.

The diet of cardiopathic patients should be carefully regulated. This pertains especially to the hyposystolic period of heart lesions, but early care of the diet may save much trouble. Adler and Stern, from examinations made after test meals, conclude that the stomach of cardiac patients is not materially different from the normal stomach. Einhorn concludes that heart disease does not diminish the acidity of the gastric juice, and that gastric symptoms are the result of congestion of the mucosa.

Definite rules should be given cardiac patients about their manner of eating and drinking, to the effect that the meals should be taken regularly. There must not be less than five or more than six hours between meals; there must be no food taken between meals. (When marked cardiac failure is present and nourishment is important, food in concentrated form, such as peptonized milk, beef peptonoids, somatose, etc., may be given every three hours). The amount of fluid taken with the meals should not exceed eight ounces. Mineral or plain water, or seltzer water and milk may be taken between meals. Balfour recommends sipping hot water between meals as a cardiac stimulant more valuable than alcohol. The latter he justly objects to. Extremes in the temperature of ingested fluids affect the pulse rate and blood pressure. According to Strickler and Friedrich, cold water diminishes the pulse rate and raises the blood pressure; very cold water sometimes diminishes the blood pressure; warm water quickens the pulse rate and raises the blood pressure; luke warm water usually lowers the blood pressure. These effects are more marked in diseased conditions than in health. The only alcoholic drinks that should be allowed are an occasional glass of dry wine, like

Rhine wine, moselle or claret at meal time. The abuse of alcohol (and any continued use of the stronger alcoholic preparations constitutes abuse in this connection) is a most dangerous thing in cardiopathic patients. Care must also be exercised in regard to the use of tea and coffee. Stokes long ago pointed out the tendency of these substances to produce irregularities of the heart's action. Personal idiosyncrasies are very marked, however, in relation to these drinks.

Tobacco should be altogether interdicted. Bernard showed that tobacco increased the pulse rate, and many observers have declaimed the disastrous effect of tobacco on the heart. (Decaisne observed 21 cases of intermittence of the pulse independent of organic lesion, in 88 confirmed smokers. He thinks a state of *narcotism* of the heart is developed, characterized by pulse intermittence.) The bad effect of tobacco on the cardiac rhythm is particularly evident in functional disorders where there is a tendency to rhythmic alterations. In many of these cases the digestive functions are to blame, nevertheless, in a person with well marked functional or organic disease of the heart, the use of tobacco should be prohibited.

Mineral waters are of little therapeutic value beyond the fulfillment of some temporary indication. Beaumetz declares that they are contraindicated, especially the sulphurous waters.

The character of the food should be adapted to the individual patient with the object of easy and complete digestion. In general, the carbohydrates,—fats, sugars and starches—should be eliminated as far as consistent with maintaining a nutritious diet. Meats and meat preparations may be allowed providing the digestion is fair and the kidneys are not involved in the case. For cases of marked ataxia of the heart, milk, buttermilk, or milk and seltzer water is the best diet. Huchard especially commends milk diet for the disturbances arising from the auto-intoxication of renal incompetence. Moreover, milk is a valuable diuretic, which fact, according to Sée is due to the lactose contained therein. In cases where dropsy is present and a mixed diet can be taken, a diet as dry as possible is recom-

mended for its favorable effect on the œdema. In my experience the good effect of this diet is not sufficient to balance the difficulty of maintaining it.

In some cases the first evidences of insufficiency or arrhythmia, or both, on the part of the heart are connected with some disturbance of the alimentary tract, and regulation of this will correct the cardiac symptoms. Many of the disagreeable symptoms of a weak but not failing heart, which arise from visceral congestion, are relieved by attention to the gastric and hepatic functions. Indeed, this is true of the most advanced cardiopathies also. It is wonderful what a change for the better is often induced in a weak circulation by the administration of a few doses of mercury. Murry says that mercury, in the form of blue pill, is extremely valuable in some cases of heart disease. A useful combination is the following:

R

Irisin,	gr. $\frac{1}{2}$.
Euonymin,	gr. $\frac{1}{2}$.
Ext. nucis vom.,	gr. $\frac{1}{2}$.
Hydrarg. mass.,	gr. 3.

M. s. For one pill to be taken at bed time.

In some cases four or five quarter-grain doses of calomel may be preferable.* In many cases of cardiopathies after middle life the continued administration of small doses of mercury is decidedly beneficial. Here the red iodide, or the corrosive chloride, of mercury, may be used. Wood points out that with hepatic congestion, œdema, and a hard pulse, digitalis acts poorly, and mercurial purges are necessary. He also advises from $\frac{1}{16}$ to $\frac{1}{8}$ of a grain of corrosive sublimate with tincture of the chloride of iron for continued administration.

Moral, as well as physical, hygiene must be considered in managing cardiopathies. Strong emotions and passions affect the heart disastrously. Certain restrictions must therefore be placed upon the passions and emotions. Another question with hygienic relations is that of the mar-

*Murry [cites the case of a man with chronic cardiac disease, who took 20,000 grains of blue pill in ten years with great benefit, and without salivation, nausea or purgation.

riage of cardiopathic patients. While such patients are not at all likely to follow advice in this matter, even after having asked it apparently in all sincerity, we should place the facts before them and let them assume the responsibility. As a rule pregnancy affects unfavorably any valvular lesion. Dangerous symptoms are likely to appear during gestation, or during, or immediately after, delivery. The dangers to the woman are, from hemorrhages, syncope, rupture of the heart, or thrombus of the heart. Miscarriages are frequent (Durosier found 21 abortions or premature births in 41 patients). Birth is apt to occur at seven months.* The children die early (37 out of 40 children from cardiopathic mothers died before the sixth year—Durosier). The greatest danger to the mother is at about seven and a half months. Chloroform should be used during labor, and the woman should be saved violent effort by every proper means at the command of the accoucheur. The mother should not be allowed to nurse the child. In a pregnant woman, with chronic endocarditis, if compensation be perfect and the kidneys are healthy, she will probably go through her gestation and confinement without trouble. If, however, she has suffered from chorea in early life, one may expect trouble from this source between the sixth and eighth months of gestation, especially in a primipara.†

There are some medicinal measures which, while applicable to any period of cardiopathies, find their chief clinical application in the threatened failure of the heart which antedates actual dynamical inability on the part of the heart muscle. Such remedies as iron, strychnia, arsenic, the iodides and mercury are of most use at this time. Iron in all anæmic patients; in young persons the tasteless tincture is

*According to McDonald, aortic insufficiency and mitral stenosis are the most unfavorable lesions in relation to pregnancy. See says that mitral stenosis is less dangerous than regurgitation as far as labor itself is concerned. In relation to abortion, mitral insufficiency is said to be the most unfavorable, and aortic insufficiency the mildest lesion. Marked mitral stenosis is the most disastrous of all valvular lesions,—Handfield—Jones.

†In a primipara with an aortic valvulitis and an early history of chorea, the latter trouble reappeared at the sixth month of gestation, was uncontrollable (speech and deglutition becoming impossible) and premature labor was induced at seven and a half months. Delivery was accomplished with difficulty, and the patient recovered without any appreciable ill effect on the heart.

an available preparation; in older people the liq. ferr. et am. acetatis (Basham's mixture), or the iodide of iron are useful. Strychnia ($\frac{1}{30}$ gr. t. i. d.) is a valuable tonic for continued administration. In cases where cardiac energy is defective without evident structural lesion, strychnia may be given continuously for years with benefit (Balfour). Iodide of sodium is preferable to the potassium salt. It may be given in doses of three to five grains thrice daily, and is useful for continuous administration in adult life because of its tendency to oppose vascular rigidity. Arsenic is useful (Fowler's solution) when valvular disease is associated with vascular sclerosis. Mercury may be employed in the manner already spoken of.

When the patient is seen early enough the careful use of the measures already alluded to may postpone indefinitely the actual development of muscle failure. The majority of patients, however, have already entered upon the hyposystolic period of chronic endocarditis when they first appear for advice. They demand remedies more potent for immediate results than are those already spoken of. It is now simply a question of the integrity of the heart muscle and the urgency of the demand for help. In general, the indications of a failing muscle are: changes in the pulse, dyspnoea, oedema, renal insufficiency, visceral congestions, as of the lungs, liver and stomach. Actually, we judge of the condition of the heart muscle by the quality and character of the first sound as related to the second sound, and by the nature of the physical changes in the heart; by the character of the second pulmonic sound in mitral lesions, and of the aortic second sound in aortic valvulitis in relation to the vascular tension. We must remember that muscle failure may be, in a sense, relative to, and dependent upon, increase in the peripheral resistance. Thus, in a woman of sixty years, presenting to a distressing degree all the symptoms of cardi-ataxia in connection with sclerosed vessels, marked relief and comparative comfort for a long time, was obtained through five drops of tincture of opium thrice daily.

Right here we may mention the necessity, in most cases, of the exhibition of a vaso-dilator in connection with cardiac stimulants, especially with digitalis, which contracts the

arterioles. Particularly in persons above middle life a vaso-dilator is necessary if we are to get the best effect from such a drug as digitalis, and many failures with the drug are due to the omission of this very necessary adjunct. The best vaso-dilators are opium, nitrite of sodium and nitro-glycerine. Opium is the best because it is the safest, most reliable, and the dose is most easily adjusted. From two to five drops of the deodorized tincture of opium may be given with the liquid preparations of digitalis, or one-third of a grain of powdered opium may be used with the solid preparations of digitalis. Chemically pure nitrite of sodium is a reliable vaso-dilator, the dose, however, is more difficult to adjust as some persons are very sensitive to its action. From one to five grains may be given thrice daily. Nitro-glycerine is a powerful vaso-dilator. For this purpose it should not be given in doses large enough to stimulate the heart. One two-hundredth of a grain (in tablet form) will answer. Its action is much more rapid and transient than that of opium or sodium.

If pronounced symptoms of failure of the heart muscle are present, rest in the recumbent position is necessary. The more absolute the rest, the more pronounced the benefit. By rest we relieve the excessive intra-ventricular pressure which is slowly but surely dilating the ventricles, and the medicaments have greater possibilities for good. Marked improvement will often be obtained through rest alone, without any medication. Muscular exercise should be given by massage, during the rest cure, or, in suitable cases, passive or resistance movements may be utilized.

In connection with the medicinal treatment of the hyposystolic period of cardiopathies we will consider first, those medicaments which are used to increase the dynamical power of the heart muscle.

Digitalis. The medicinal treatment of the hyposystolic period of cardiac lesions is the most important feature of the therapeutics of this stage, and the most important remedy is digitalis. It is unnecessary to consider here the origin, history, or mode of action of digitalis. It is the indications for its use and its practical application in which we are interested. The one cardinal indication for the em-

ployment of digitalis is failure of the heart as a pump. Digitalis is indicated in any case where there is dynamical failure of the heart muscle, without reference to the nature or location of the primary valvular lesion. There is no exception to this rule in the abstract, though there may be individual contraindications, such as intolerance of the drug, or a dangerous degree of muscular degeneration. Without wishing to discuss the question of the essential nature of the action of digitalis, we may note that the majority of cardiopathies appear for treatment with well marked dynamic failure. We stimulate the heart to more energetic contraction with digitalis. If the integrity of the muscle be fair, the slower and firmer contraction determines better blood supply to the muscle, and thus the tonic action of digitalis in building up the tone and integrity of the muscle is instituted and may be of permanent benefit if the drug is properly handled. On the other hand if the muscle is sufficiently degenerated, we will get a modified and temporary stimulant action from the digitalis, which, after a few days of unsatisfactory struggle on the part of the heart, is lost, and the latter relapses into a condition of asystolism. Thus we say that clinically—in the beginning of a case—we employ digitalis most often as a stimulant, and the tonic properties are dependent on its virtues in this regard. Therefore it should be used at first, as any other stimulant or symptomatic medicine is used, in such doses as will produce the desired effect.*

During the earlier history of the hyposystolic period of aortic stenosis, digitalis is often not as serviceable as strophanthus, for the arrhythmia so often a feature of this lesion seems at times to be increased rather than diminished by digitalis. When right ventricular failure is present however, digitalis is of service. Much objection has been made

*Balfour says that digitalis is used for these purposes: first, to improve the nutrition of the myocardium and thus augment the force of the contraction; second to contract dilated ventricles; and third, to remove dropsy. I would restate the first proposition in this way: We give digitalis to augment muscular contractility and thus to promote nutrition of the myocardium, for, better nutrition postulates better blood supply to the muscle, which, in turn, postulates more forcible cardiac contraction. If we did not get the latter, we could not obtain the former as a result of the administration of digitalis. These results obtained, we can prolong the effect
bly for years by much smaller and continued dosage.

to the use of digitalis in aortic regurgitation. Considering that, mechanically, aortic regurgitation presents the most difficult conditions to manage of all the valvular lesions, and that the ventricular dilatation is a progressive affair which can never be brought to a standstill unless the leak be slight, we find that digitalis is relatively as serviceable in cases of aortic regurgitation as in other valvular lesions. The dose, however, should be from one-quarter to one-half greater than in mitral lesions.* Balfour does not agree with the statement that the action of digitalis is generally bad in aortic regurgitation. He thinks digitalis is indicated in any case no matter what the nature or cause of the concomitant lesion may be.†

The most reliable preparation of digitalis is the infusion made from the fresh English leaf (a cultivated leaf free from stems and stalks which contain, according to Brœker, only 20 per cent. as much digitalis as is present in the leaf). It is more eligible than the leaf itself. The active principles of digitalis are, it is claimed by chemists; digitalin, almost insoluble; digitoxin, wholly insoluble in water; digitonin and digitallen, both fully soluble in water. The fluid extract and the tincture probably contain all of these principles, but not in constant proportions. The infusion contains digitonin and digitalein with but a trace of digitalin, and is said to be free from digitoxin which is the most active and dangerous constituent of digitalis. The infusion is therefore the safest preparation and its dose is the most easily graded. A useful formula is the following:

B

Tinct. opii deodor.,	3i-ii.
Kalii nitratis,	3iv.
Inf. digitalis (fresh English leaf) q. s. ad.,	3xii.

M. s. Tablespoonful once in four to six hours.

*A man came under observation with aortic regurgitation. He had been taking for several years with more or less regularity, on his own responsibility, doses of from one to two drams of tincture of digitalis, once, twice, or three times daily, or as he expressed it, a mouthful when he thought he felt the need of it. The dose was reduced and the heart acted badly. Death occurred shortly afterward, probably from cerebral embolism.

†According to Morrison, digitalis is useless in aortic regurgitation, and belladonna, nitrates or strychnia are indicated to quicken the circulation; the circulation being largely due to the aspiration force exerted by the ventricle and by the inspiratory act. Digitalis is indicated in mitral lesions where maximum aspiratory force is required.

The powdered leaf is preferred by some, and is probably the most reliable of the solid preparations. The dose of digitalis is more or less arbitrary and is stated about as follows: Maximum dose of German digitalin, $\frac{1}{16}$ of a grain; French digitalin, $\frac{1}{32}$ of a grain; digitoxin, (the most active, definite and poisonous preparation of digitalis), $\frac{1}{8}$ of a grain. The maximum dose of digitalis leaves has been given as five grains, toxic dose ten grains. The dose of any preparation of digitalis will necessarily vary so much under different circumstances that fixed dosage has no place in the therapeutic application of the drug in cardiopathies.

We find our cases in a condition of ruptured compensation. We at once set about to correct the irregular circulation by comparatively large doses of digitalis, grading the dose by the effect. We do not stop to grade the dose so that the quantity of drug ingested is balanced by that excreted, before a second dose is administered, by which the tonic action of the drug is attained (Balfour). But, having attained a restitution of the circulation, the latter method of dosage (one grain of powdered leaves or its equivalent in twenty-four hours, or $\frac{1}{10}$ grain doses of digitalin—Balfour) is adapted to maintaining the effect. We would unquestionably have more permanent results if we could maintain for years a more or less constant administration of small quantities of digitalis, instead of losing sight of our patients as soon as the circulation is restored, not to be seen again until dilatation has again attained a dangerous degree.

Beates has recommended digitalin (German, pure, — Merck) in doses of from $\frac{1}{16}$ to $\frac{1}{2}$ of a grain, as a reliable cardiac stimulant.* This apparently large dosage is effective, and is well borne by the stomach. In two women, seventy-two and sixty-five years old respectively, one with

*Beates concludes that: 1, Digitalin (German, pure, Merck) is a derivative of digitalis not contaminated by other active principles; 2, It possesses a uniform and unvarying strength; 3, It is relatively free from the property which produces gastric irritation; 4, It is a powerful stimulant to the whole cardiac apparatus; 5, It is a pronounced and reliable stimulant to the vaso-motor system; 6, It does not develop cumulative action; 7, Adult dose from 1-10 grain (minimum) to $\frac{1}{2}$ grain (maximum).

an atheromatous aortic stenosis, and the other with a rheumatic aortic lesion with secondary mitral leakage, digitalis in one-tenth grain doses gave excellent results without any evidence of gastric disturbance. A good formula is:

R

Digitalin,	gr. $\frac{1}{10}$
Strychnia sulph.,	gr. $\frac{1}{16}$
Pulv. opii.,	gr. $\frac{1}{4}$

M.

Ft. capsul no. i.

The cumulative action of digitalis, about which much caution has been given, is seldom or never observed. To suitable cases continuous administration for months is not productive of trouble, though it is better to intermit the exhibition of the drug every two or three weeks, for a few days. The asystolism which digitalis is said to develop is largely due to its administration in cases unsuitable to the drug.

Strophanthus. According to Fraser the action of strophanthus is mainly on the heart muscle and only slightly on the arteries,* which he considers advantageous, as it undoubtedly is under some circumstances.† Strophanthus increases the force and duration of the cardiac systole. Its tonic action is slight or altogether wanting, as the tonicity of the heart muscle is not maintained after the cessation of the drug, but relapses into its former condition unless improvement in this respect has been obtained through rest, diet, tonic medication, etc., during the period of stimulation by the strophanthus. In the minor degrees of ataxia of the heart exhibited by nervous, irritable, excitable persons, strophanthus is particularly useful. This is especially true of mitral stenosis, in which lesion strophanthus is particu-

*A solution of strophanthin, 1-3,000 passed through the vessels of a frog's web and caused no change, only slight transitory change resulting from a solution of 1-2,000. A solution of digitalin, 1-20,000 caused sufficient contraction to stop the passage of the solution.

†Balfour considers the lack of action on the arterioles of doubtful advantage, as the blood pressure is more variable and metabolism uncertain. Strophanthin is more soluble and absorbable than digitalin, is rapid in action, and available for hypodermic use. Strophanthus is the only member of the group which rivals digitalis, but it is not equal to, and will not displace digitalis.

larly effective in controlling the distressing palpitation and dyspnoea so frequently present. In the more marked ataxia which borders on asystolism, resulting from any lesion whatever, strophanthus is not effective in stimulating the heart to its usual dynamical condition. In some instances strophanthus causes gastric distress and diarrhoea.* Gastric distress is not so likely to occur if strophanthus be administered in laurel-cherry water. The dose of tincture (P. D. & Co's.) is from seven to twelve drops. The dose of strophanthin is from $\frac{1}{100}$ to $\frac{1}{40}$ of a grain. The former dose is large enough for hypodermic use. Strophanthin is as reliable as other alkaloids of its class, and fairly represents the action of the tincture. Strophanthus has been regarded by some as a reliable diuretic, but its action in this regard is decidedly uncertain.

Caffein. This drug has been recommended by Dujardin-Beaumetz, Huchard and Semmola in asystolic conditions, arrhythmia and cardiopathies of bulbar origin†, as a cardiac tonic and diuretic. It is, in some few instances an efficient cardiac stimulant and diuretic. It seems particularly adapted to those cardiopathies which are associated with vascular disease or with nephritis, or both. In asystolism which is purely the sequence of a valvulitis, caffein is not usually effective as a stimulant to the heart, though it may be as a diuretic. In too large doses it causes dizziness, faintness and irregular pulse. It should be given freshly prepared, after the following formula:

℞
 Caffein (alkaloid), }
 Natrii benzoatis, } aa. 3ii—iii
 Aq. destil. q. s. ad., ℥iii

M. Sig. Teaspoonful every four to six hours.

Strychnia. This drug, next to digitalis, is the most use-

*Wilcox says the gastro-intestinal disturbance from strophanthus is due to the character of the preparation and is independent of the amount of strophanthin. He thinks that strophanthus is superior to digitalis in: 1. Greater rapidity of action; 2. Absence of cumulative effect; 3. Non-interference with caliber of the arteries.

†A condition observed in bulbar affections, characterized by palpitation, dyspnoea, weakness of the cardiac sounds, oedema and dropsy, without organic disease of the heart—paralytic ataxia of the heart.

ful of cardiac remedies. During the hyposystolic period of cardiopathies it is used as a stimulant, and is the only one which can be safely and advantageously combined with digitalis in all lesions and in all stages. It is particularly efficient as a stimulant to the right heart, and is therefore indicated in the asystolic period of all lesions. The dose as a stimulant should be from one twenty-fifth to one fifteenth of a grain. The frequent hypodermic use of strychnia is a powerful cardiac stimulant in emergencies. In doses of one twenty-fifth of a grain, thrice daily, strychnia is a useful adjuvant to the action of digitalis.

Sparteïn. Sulphate of sparteïn is a remedy of value as a regulator of functional or valvular arrhythmia. According to Voight it is indicated in weakness of the right heart. Its action is rapid, and it may be used to sustain the heart until digitalis has had time to produce its effect. Sparteïn will not fill the place of digitalis in cases of actual muscular failure. It is of use in cardiac weakness and irregularities in neurotic individuals. It is also serviceable to steady the pulse in persons addicted to the opium or other drug habits. The dose of sulphate of sparteïn is from one-half to two grains. It is readily soluble and can be given hypodermically if desired.

Convallaria. *Convallaria majalis* was used as early as the sixteenth century for diseases of the heart. According to Sée it augments vascular pressure and the ventricular energy, is useful in palpitations and arrhythmia even if due to valvular lesions; its diuretic power is great and it is indicated in all cardiopathies attended with dropsy. It is also recommended in the various irregularities and conditions arising from mitral disease. The dose of the officinal fluid extract is from 15 to 30 minims. The active principle of the drug having cardiac action, is *convallamarin*, the dose of which is from one-fourth to one and one-half grains.

Cactus Grandiflorus. (Fl. ext., 5 to 10 minims. Tincture, 15 to 20 minims). Has been specially recommended in myocarditis, angina pectoris, and cardiac arrhythmia and weakness following acute fevers. According to Wilcox it should not be given in mitral stenosis. It has no cumulative effect.

Adonis Vernalis. (Adonidin, $\frac{1}{10}$ to $\frac{1}{4}$ of a grain). Has the same therapeutic indications as cactus.*

Nerium Oleander. This drug has been employed by Cefele, and *Coronilla scorpioides* has been introduced by Cardot as cardiac remedies. Poulet highly recommends coronilla $\frac{1}{2}$ to 1 dram doses of the tincture). It is useful in nervous debilitated subjects, in various functional disturbances, aids digestion, and may be useful where digitalis is harmful or has failed. These remedies are neither better nor worse than the others of their class, not any of which can be relied upon to sustain a heart muscle which has developed serious dynamical failure.

The foregoing medicaments have been considered in a group with reference to their action on the cardiac muscle. We may now refer to the symptomatic management of cardiopathies, for notwithstanding the use of the foregoing remedies, which of necessity must, if effective, relieve the various symptoms, we are often compelled to resort to special symptomatic medication for the temporary relief of aggravated conditions.

Palpitation. Cardiac palpitation is very distressing at times. In association with valvular lesions it occurs most frequently with mitral stenosis and aortic regurgitation. It is often connected with recurrent attacks of endocardial rheumatism in which case it is controlled by salicylate of sodium. Palpitation in the early history of valvular lesions, if not due to reflex disturbance from the liver or gastro-intestinal tract, may be due to derangement of the cardiac nervous mechanism. Rest is important. Cold applications (ice bag) to the præcordium or to the nape of the neck are useful, and are usually effective in proportion to the absence of arrhythmia. Bromide of potassium or sodium with small doses of aconite are useful for arrhythmic palpitations. When these means fail, small doses of opium are necessary. In the palpitation which is sometimes such a distressing feature of the asystolic period of an aortic regurgitation, opium is the

*Kummo and Ferranini claim that spartein and caffeine affect the cardiac nerves and muscles little or not at all; Adonidin and convallamarin affect both the nerves and muscle simultaneously; while digitalis, strophanthus and their alkaloids affect the muscle primarily and the nerves secondarily.

only satisfactory relief. One-quarter to one-half grain of the sulphate of codeine, five to ten drops of deodorized tincture of opium, or one-eighth to one-fourth grain of the sulphate of morphine (hypodermically) may be used. Codeine and sodium bromide make an effective combination. It is well to remember that opium is, in a sense, a cardiac stimulant (Gubler), and that properly administered and watched it is, in these circumstances, a perfectly proper, safe and effective remedy.

Præcordial Pain. Pain hardly deserves mention here, as it is not an attribute of valvular lesions. Yet it may be present in aortic regurgitation or stenosis, and occasionally in mitral lesions. When excessive heart's action is present, bromides, opium or cold applications may be employed. In aortic valvulitis with general vascular disease, nitrite of amyl or nitro-glycerine may be used.*

Dyspnœa. The constant dyspnœa present in the advanced stage of valvular lesions, and attributed by many to left auricular failure, is, in most instances, evidence of an overtaxed right ventricle. The dilatation of the alveolar vessels actually diminish the breathing space. Nitro-glycerine is often used for this dyspnœa, and may give relief through general stimulation, the real remedy, however, is strychnia. When the dyspnœa is spasmodic in character, and is associated with vascular sclerosis, the vaso-dilators are indicated. Nitro-glycerine ($\frac{1}{10}$ grain in tablet, three to four times daily). Nitrite of sodium (2 to 3 grains in water, t. i. d.), codeine, morphine, or deodorized tincture of opium. Opium is very satisfactory for dyspnœa, and will give relief while we are waiting for the action of some slower remedy†.

*Liegeois recommends the tincture of *piscidia erythrina* for the painful sensations associated with myocarditis or endarteritis; in gouty, senile and tobacco subjects. Twenty drop doses morning and evening were effective, though eight drops daily may be given continuously.

†As a result of Herouet's observations he concludes, that morphine is admissible in mitral stenosis when other means fail. It calms dyspnœa and nervous symptoms and induces sleep. Heltler considers the hypodermic use of morphine and ether as the most rational treatment of severe cardiac dyspnœa,—morphine one-twentieth to one-tenth grain doses at first, with ether injections if the pulse continues small and weak.

Syncope and Cyansis. Attacks of syncope are most likely to occur in connection with aortic stenosis or mitral stenosis. Rest in the recumbent position, with the head low, is necessary. Stimulation may be given with alcohol by the mouth or hypodermically. Camphor (hypodermic injections of camphorated oil) or musk may be given, though the latter is not very satisfactory. Forty or fifty minims of ether hypodermically is very efficient. In cyanosis, in addition to the above treatment, we should use large doses of strychnia hypodermically ($\frac{1}{8}$ to $\frac{1}{4}$ of a grain). In dyspnœa and cyanosis associated with marked venous stasis, especially in connection with mitral stenosis, we should not hesitate to bleed. The abstraction of a few ounces of blood will not only fulfill symptomatic indications, but will save and prolong life.*

For gastric distress from fermentation, correction of the diet should suffice; if not we may use the following:

R
 Natrii bromidi, 3iv
 Bismuth subcarb., 3i
 Pulv. carbo. lig., 3ii
 Aq. cinnam. q. s. ad., 3iii

M Sig. one teaspoonful every 4-6 hours.

If moderate jaundice appears, in spite of the use of mercurials already alluded to, we may give sodium phosphate in one-half to one dram doses, three or four times daily. For diarrhœa which is sometimes troublesome, the bismuth preparations are best, especially the sub-gallate in five to eight grain doses every three to six hours. It may be necessary to use small and continued doses of tincture of opium. If the diarrhœa is watery, with frequent passages, we may give the following:

R
 Tr. opii deodor., 3ii
 Tr. camph., 3ii
 Acid nitrici dil., 3iii
 Elix. simp. q. s. ad., 3iiij

M Sig. Teaspoonful after each stool.

*Pye-Smith considers cyanosis with dilatation of the right heart either from pulmonary stenosis or other obstruction, as an indication for venesection, and is corroborated by Lafleur, who says that the most benefit is obtained in cases of primary cardiac and arterial disease. According to Huchard we should bleed when in sclerosis, the ventricle is unable to meet the increased peripheral resistance. Advanced disease of the coronary arteries or heart muscle are contraindications for bleeding.

Dropsy. Dropsy is an important though erratic symptom in valvular disease. It is important because it shows in a general way the imperfect circulation, and because the patient attaches immense consequence to it. If we can manage the oedema, we may be sure the patient will rest satisfied with our management of the other features of the case.* Oedema may be, at first, largely a matter of gravity, and the recumbent position will often relieve it, or it will disappear with the increased vascular tension incident to the administration of digitalis. If the blood pressure is very low bandages to the legs will aid the digitalis. The infusion of digitalis should be given and if the oedema is well marked, a brisk cathartic should be used. One of the best cathartics is compound jalap powder, in dram doses morning and evening (Canfield). In some cases of sclerosis of the arteries with a firm, tense pulse, digitalis will not cause diuresis unless we accompany it with a vaso-dilator (opium, nitro-glycerine, or other nitrites). Digitalis is efficient in those cases with weak, irregular pulse, and soft, doughy, easily pitting tissue. At least a half an ounce of the infusion must be given every four hours. Again, though we regulate the kidney circulation in one or both of these ways, diuresis may not occur. We will then have to add some stimulant to the kidney itself. Here the old time pill consisting of one grain each of digitalis, squills and calomel, is useful. Ten or fifteen grains of the acetate, or nitrate, of potassium added to the dose of infusion of digitalis may be efficient.

Squills, broom tops, juniper (teaspoonful of the fluid extract thrice daily), or Trousseau's diuretic wine,† are useful

*Glax advocates the treatment of cardiac dropsies by restriction of the fluids ingested to correspond with the amount excreted. He thinks this method will re-establish compensatory action of the heart. Either a comparative or absolute dry diet is difficult to carry out, and while it is quite possible to give too much fluid to some cases, we do not believe that a dry diet reconciles the physiological conditions and therapeutical indications which we have to meet.

†B

Digitalis fol.,	10 gms.
Scillae rad.,	5 "
Bacc. Juniperi,	50 "
m Vini alb.,	750 "

Macerate four days, add acetate of potash, 15 gms. Filter. Dose, tablespoonful 3-4 times in 24 hours.

though the latter is more adapted to cases associated with nephritis where we are not giving cardiac-stimulants. Bitartrate of potassium in connection with digitalis is often of service, or the following formula as recommended by Brunton, (*Haustus Scoparii Compositus*—St. Bartholomew's Hospital): potassii tartratis, gr. xx; spirit. juniperi M xxx; decoctio scoparii, ad ℥i, may be used with digitalis. The old "Imperial" drink* (*Potus Potassii Tartratis Acidæ*), long used in fevers, may also be serviceable as well as agreeable.

In severe cases of dropsy from combined renal and heart disease, caffeine (natro-benzoate) after the formula already given, is decidedly diuretic. When large quantities of fluid can be given milk is a good diuretic. According to Sée the diuretic qualities of milk are due to lactose which is a certain and powerful diuretic in cardiac dropsy, lactose being better than milk diet as it admits of meat or other food. It is soluble in cold water, one part in six, and one hundred grammes daily produces marked diuresis.

Theobromine is recommended by Sée as an unfailing diuretic. It is insoluble and is given in powder (capsule) with the food or in milk. First day, 1½ grammes; second day 3 grammes; third day, 4 grammes; then suspend treatment for five days; then if necessary give 2 grammes daily for three days.

Our two most valuable special diuretics however, are calomel and diuretin. Sée, Pepper and others recommend calomel as a special diuretic. It is the most reliable diuretic we have for cardiac dropsies. I have come to regard the failure of calomel in pure cardiac dropsy as due not to the drug itself, but to failure to properly adjust the circulation, or to improper administration. If the circulation be stimulated and the kidney be not too much diseased, then calomel will surely cause diuresis. If the pulse is weak and intermittent, digitalis should be given for two or three days before giving calomel, which is then administered in three-grain doses, morning, noon and night, for two days—eighteen grains in all. During this period the bowels should

*Acid tartrate of potash, 60 grains; sugar and boiling water a sufficient quantity; one or two lemons, stir occasionally till cold, strain and administer.

not be allowed to move. (This can be effected by giving five drops of deodorized tincture of opium half an hour after each dose of calomel.) The diuresis may be delayed for twelve hours after the last dose of calomel, but usually begins on the second day of its administration. The effect usually lasts for some time. The effect of calomel in nephritic dropsies is uncertain, but sometimes surprisingly efficient.

Diuretin (sodio-salicylate of theobromine, containing it is said, about 60 per cent. of theobromine) is a valuable diuretic in cardiac dropsy. Much clinical study has been given the drug during the last five years. Some believe its good effect on the circulation is due to its diuretic properties (Pawinski). Others believe it acts on the heart also (Hoffman, Geissler). It is decidedly doubtful if diuretin has any direct action on the heart. According to Brunton, diuretin increases the excretion of water by acting on the secreting cells and nerves of the kidneys. Diuretin may be given in watery solution, twenty grains every four hours until six doses are taken,—one hundred and twenty grains in all. If this quantity does not cause diuresis it is useless to continue it. Less than ninety grains in twenty-four hours is not effective. Small and continued dosage is useless. The effect when obtained lasts for some days.*

If we are able to adjust the circulation—and there are few cases where we cannot stimulate the heart sufficiently to allow of diuresis—we can almost invariably get rid of dropsical accumulations. I have never been obliged to resort to Southey's capillary tubes, and very rarely to tissue puncture. When the latter method is resorted to, it must be done with antiseptic precautions. The leg must be washed with warm water and soap, then with sterilized water, then with alcohol. A large needle is sterilized in a flame and a number of punctures made in the skin of the calf of the leg, twenty or thirty punctures being made in each leg at one

*A patient, seen in consultation, with a most extensive dropsy, was given the calomel treatment. Diuresis not occurring by the time the last dose was administered, diuretin was given (sufficient time was not allowed as the action of calomel is sometimes delayed). During the next three days such an enormous quantity of water was eliminated that the man went into a condition of collapse, with a pulse of 160 and sighing, rapid respiration. He was resuscitated by the rectal injection of several pints of normal salt solution.

sitting. The leg is then wrapped in a thick layer of cotton. When the cotton is saturated it is changed, and the leg washed with sterile water. The cotton may be covered with oil silk or rubber. Should inflammation of the skin develop, it can usually be allayed by a fifteen per cent. zinc oxide—lanoline ointment.

Hypnotics. Insomnia is frequently a troublesome condition in cardiopathic patients, particularly in those suffering from aortic lesions. The mental hallucinations and peculiarities so marked in some cases, are always more aggravated at night. It is not always easy to decide whether to use a hypnotic or not, or as to which one we shall rely on. Various drugs have been praised for their freedom from cardiac depression and their hypnotic power. But, after trying them all we usually return to the old stand-by,—opium. A quarter of a grain of morphia, with fifteen grains of sodium bromide, is the most reliable hypnotic. Chloral and sulfonal are unsatisfactory in moderate doses, and unsafe in full doses. Trional (5–10 grain doses) and tetronal (5–15 grains) are safer than the former, but uncertain in conditions affecting the intra-cranial circulation. Chloralamid (30–40 grains) is relatively safe and efficient. In large doses it has some disorganizing action on the red blood cells. Paraldehyde ($\frac{1}{2}$ to 1 dram) has gained ground as a hypnotic. According to Coudray, it does not depress the heart or lungs.*

* R

Paraldehydi,	3i
Spirit. chloroformi,	M xv
P. tragacanth,	℥i
Syr. auranti cort.,	℥ss
Aqua q. s. ad.,	℥iii

M

S. One or two doses.

These are the best of the newer hypnotics for use in this connection. Their action is, however, uncertain. Some act better if given in conjunction with a small dose of morphine, though better results will be obtained if the latter with sodium bromide is depended on.

A POTHUMOUS ESSAY.

FAITH AS A REMEDY FOR DISEASE. By the late
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Medicine, Chicago Post-Graduate Medical School.*

[The following essay was delivered by the late Dr. Lackersteen at a large gathering of physicians called to discuss, post-prandially, the therapeutic value and influence of faith in disease processes. The meeting occurred on the evening of September 27, 1897, and this essay constitutes the last public expression of its remarkably-gifted and widely-experienced author.—EDITOR.]

If we wish to discuss intelligently and profitably the subject of "Faith as a Remedy for Disease," it is necessary that at the start we should have a clear conception of what we mean by disease, by a remedy, and by the term faith as an agent for influencing and modifying favorably the diseased organism so as to restore it to its normal condition.

In the first place then it should be stated that disease, like everything else in this world, is the product of a series of relations, and not an entity. The science of modern pathology deals properly with the synthesis of disease and the diseased condition considered as a complicated revolution, and in this morbid complex the scientifically trained physician can always recognize a number of primordial elements which may be reduced to a sort of trilogy, namely: 1. A cause. 2. A lesion, and 3. A symptomatic evolution. Our general conception of modern internal pathology is this, that as far as it has gone it is almost an exact science. The number of diseases, that is, in other words, the modifications of the normal state of nutrition and their catalogued expressions, is so considerable that we can expound and describe them only in a veritable classification. The great Lænnec in his celebrated treatise on "Diseases of the Chest and on Mediate Auscultation," tells us that "diseases are merely modifications in the texture of the animal organs, in the composition of their fluids, and in the order of their functions. I shall not endeavor to ascertain," he says, "the

primary, or as they are called, proximate causes of diseases. The variety of researches of this kind is sufficiently proved by the profound oblivion into which the theories of this nature have successively fallen."

Since Pasteur's brilliant researches in fermentation, made some 30 years ago, we are daily adding to our knowledge of the causation of disease, and the discoveries made in this line are so numerous and so extremely important that the position of the physician to recognize the true condition of his patient, and therefore his ability to render appropriate and effective assistance in 1897 when compared with what his position and ability were in 1890, would seem to present pictures of two generations quite distinct and far apart from each other. But we are very far from knowing everything.

When we remember that nothing whatever can take place without a cause, and know that in the living body things are incessantly taking place, we cannot help realizing the continuous operation of the law of causality with the continuous evolution of effects.

Now the law of causality is the most important law of the universe and is without exceptions. It runs through all states and affairs—physical, intellectual, moral, spiritual—therefore the most universal in its application. All the textures, fluids, molecules in the organism are in organic connection and mutually influence one another, for there can be no action without reaction.

In the occurrence of any change, that is, in the becoming of anything, there is always the interdependence between the agent and the object acted upon. The one, viz., the agent, is called the cause, and the other is logically and philosophically known as the condition. The condition, therefore, includes all the factors or the aggregate of things which influence or condition the life and potentiality of the cause. In the order of the happening the cause is the antecedent, the effect is the consequent, and the point to remember in this connection is that it is absolutely impossible for any single antecedent to produce or become a consequent. The law of causality asserts the necessity existing between the antecedent and the consequent, in other words, between

cause and effect, and this necessity is the condition. It is, therefore, only when the cause is properly conditioned that it becomes efficient. It is only a properly conditioned cause that can possibly produce its effect. As to the human body, the nervous system, the vaso-motor system, the secretory and excretory systems, the totality of the nutritive system, are all contributory elements to the condition which can render the cause of any disease effective in the organism. But you can easily imagine how, despite the impact of foreign agents, the body may show no signs of morbidity if the bodily elements maintain their healthful, resisting functions. You can again easily imagine when the vital equilibrium is preserved in its perfect rhythmic dynamism, it becomes insusceptible to disturbing influences. This might be almost mathematically demonstrated. From this argument we learn the fact that poison is not a thing or an entity, but simply a potentiality which can become active only under suitable conditions.

Now granting that a cause has become effective in the production of disease, what is the remedy? The nature of the cause, the general conditions of the effect, would naturally form the indications of the treatment. Rational therapeutics, therefore, is based upon a knowledge of the needs and requirements of the organism laboring under diseased and perverted functioning caused by some definite and well recognized influence or agent. In the study of the infectious diseases a wide field lies open before the pathologist to experiment with the lower animals, and by the experimental method he arrives indirectly at conclusions which assume an important and scientific value. A modern writer who says that "Inductive reasoning consists in verifying and classifying all the facts pertaining to the subject matter undergoing investigation with a view of arriving at the general principle or law which underlies all the observable phenomena. This is the first great step in the process without which man can never be certain that he knows anything. The utmost care therefore is necessary in this step in order to avoid the pitfalls which beset the pathway of every honest investigator. The first of these pitfalls is inaccurate observation, the second is insufficient verification,

and the third is the constant tendency of the human mind to generalize from an insufficient number of facts. * * * Referring to this general tendency of the mind to generalize from an insufficient number of facts—a propensity which also includes inaccurate observation and insufficient verification, it will be observed that there is also a tendency to range facts into factions, and to determine principles by suffrage. This often happens after an investigator has committed himself to an hypothesis.”

I wish to refer just here to the fact that “the laws of correct reasoning are as immutable as the law of gravity; and properly applied are as certain and exact in their results as a law of mathematics. They are the natural laws of the human intellect, and are inherent in its nature and constitution. But what is true of every law of nature is also true of the law of reason, namely, that until it is discovered and formulated by man, he is not in a position to avail himself of its uses, or to reap the benefits of its beneficence.”

Now what is the process which reason adopts in the scientific investigation of phenomena? In the first place the facts are carefully observed and recorded. Facts, as you know, are independent of hypotheses. “Facts are primordial. Hypothesis is an instrument of logic for the scientific investigation of facts.”

Take a case in which a miraculous explanation is offered for the cure of some disease on the one side, and a natural hypothesis is claimed as sufficiently explanatory on the other. Here we have two antagonistic hypotheses. I speak of a supernatural agency as an “hypothesis” although it is hardly deserving of that designation: for it is, in fact, merely a short and easy method of avoiding, rather than promoting, a truly scientific investigation of the subject-matter. But such as it is, it is an exceedingly convenient hypothesis; and for the use of those who imagine that simplicity is a test of truth, it is admirably adapted. It is a summary way of disposing of an intricate problem—of avoiding a difficulty instead of investigating its cause. It should be constantly borne in mind that an hypothesis is not a final dogma. It is, as I have said before, merely an instrument of investigation. To establish it as a scientific truth, there are two pre-

requisites: 1. It must explain all the facts; 2. There must be no other hypothesis capable of explaining all the facts. When these conditions are present, then and not till then, is an hypothesis elevated to the dignity of a scientific truth, that is, an established principle.

Keeping all these facts now clearly in mind we reach the proper subject-matter for discussion this evening. Is faith a remedy? How shall we define faith? I shall take both the definition and the stated effects from the Scriptures. The definition given by St. Paul when translated into the English of today is as follows: "Faith is the hypothesis, the platform, which supports us, the ladder so to speak which we climb in order to reach, and grasp, and secure the fulfillment of our expectations. It is the means by which hope is ripened into confidence."

What can this faith do in the way of reacting and modifying diseased conditions? The author of Christianity explains this as follows: "If thou *canst* believe all things are possible to him that believeth." Is this result supposed to be achieved through some outside or supernatural agency? Why no. It is an attribute of the human mind which operates according to its own natural law, inherent in its constitution. How do we know? All who have given any attention to the subject acknowledge that the mind exercises an immense power over the body, forcing it at times to unusual or even extraordinary effort. This power is exercised both in health and disease but is peculiarly evident, perhaps because it is more closely observed, in the latter condition. If all things were not possible to him that believeth we should never hear today of the pale and sickly astral bodies, of the grotesque Mahatmas, of occultism of theosophy, and of numbo jumbo.

Everyone, physician and physiologist especially, know some curious instances illustrative of the effects of imagination and credulity. There is the story related by Dr. Tuckey of the hospital patient to whom the consulting physician gave a prescription, with the remark—"Take this, it will do you good." At the man's next visit he being asked for the prescription, replied that he had swallowed it as directed and it had according to promise, done him "a power

of good." There are few cases of this kind more remarkable than one related by Woodhouse Braine, the well known chloroformist. Having to administer ether to an hysterical girl who was about to be operated upon for the removal of two sebaceous tumors from the scalp, he found that the inhaling bag was free from even the odor of any anæsthetic. While a fresh supply was being obtained he thought to familiarize the patient with the process by putting the inhaling bag over her mouth and nose and telling her to breathe quietly and deeply. After a few inspirations she cried, "Oh I feel it; I am going off!" and a moment after her eyes turned up and she became unconscious. As she was found to be perfectly insensible and the ether had not yet come Dr. Braine proposed that the surgeon should proceed with the operation. One tumor was removed without in the least disturbing her and then in order to test her condition a bystander said that she was coming to. Upon this she began to show signs of waking, so the bag was once more applied with the remark "She'll soon be off again," when she immediately lost sensation, and the operation was successfully and painlessly completed. This girl had taken ether three years before, so that expectation and the use of the apparatus were sufficient to excite her recollection and call back the effects of the drug as then experienced.

It is told that when Sir Humphrey Davy was investigating the properties of laughing gas—as nitrous oxide was then called—he proposed to administer it to a man who was suffering from facial neuralgia, but before doing so he tried his temperature by putting a thermometer into his mouth. The man took this instrument for some new subtle remedy, and in a few minutes exclaimed that the pain was gone. The same belief in the efficiency of the thermometer remains to this day among a certain lot of people as was exemplified in my own experience in the case of a man who had suffered for five or six months from a severe headache which was supposed to have been due to cerebral disease, and for which his physician, a former pupil of mine at the Post Graduate school, sent him to me for treatment. The patient was a typical granger who came all the way from Indiana with the most perfect faith and confidence of being cured by a

Chicago professor. On finding that his pulse was a good bit above 100 beats per minute I wished to take his temperature to ascertain if he had fever. With a view to that end I carefully adjusted my clinical thermometer under his tongue, and asked him to hold it there for just two minutes. I cautioned him not to chew the bulb. On loosening his tongue by the removal of the instrument from his mouth, he burst forth with the exclamation, "Be gosh, Doc, that's very strong," and on being asked to explain he declared that his headache was cured.

There is no need of multiplying instances. That faith is "efficacious" is incontestable, but its efficaciousness does not constitute its truthfulness. We can move mountains in the name of an error as well as in the name of truth, provided our belief is sincere. If the advocates of the supernatural hypothesis, so-called, the believers in shrines and relics, of saints and holy places, were to go to Mecca or travel in countries, as I have done, where Christianity is unknown and science absolutely ignored, they would see a variety of priests, mountebanks, and medicine men influencing the minds of their patients and votaries, and curing just the very class of diseases the miracle mongers profess to heal by all kinds of wild grimaces, acrobatics, amulets, charms, incantations, and howling prayers, made to the most inartistically constructed and hideous looking idols.

The effect does not depend upon the creed or the school, upon the authority that is invoked, or upon the orthodox piety or learning of the minister or operator, but solely upon the expectant mental attitude, the receptivity of the human subject that is influenced. Literally then "If thou canst believe the saying, all things are possible to him that believeth." Elsewhere we have already explained the mechanism by which this mental emotion influences the vasomotor system and through it improves nutrition. As a working hypothesis therefore we reject the supernatural interpretation, the natural processes being found to fulfill all the requirements of a scientific explanation.

Notes and Comments.

It should be remembered that strychnia is the best general tonic and stimulant we can use, but that it oftentimes needs to be exhibited in much larger doses than is usually mentioned in text books. The hypodermic method of employment is the most satisfactory when the immediately stimulating effect of the drug is desired to tide over a critical period. A dose of less than a thirty-second of a grain is of but little avail for this purpose, and more often, no doubt, a sixteenth will be better. For long continued use the solution of the sulphate is admirable, though the tablet triturate is more convenient, less objectionable in point of taste, and more accurate in the matter of dosage.

* *

Dr. H. J. Garrigues, of New York City, has recently inveighed strongly against midwives, maintaining that they are very poor obstetricians and inveterate quacks, and that they do not shrink from administering potent drugs and performing abortions. It is coming to be felt in the large cities that midwives are a menace to public health and morality.

* *

Reviewing the vital statistics of the health department of the City of Milwaukee for 1896, Dr. Edward Hamilton of that city, finds a surprising infantile mortality (*Am Jour. Obs.*, Feb.). He found that the total number of deaths from all causes was 3,904, "and of this number 1,297, or 33.2 per cent. occurred in children under 1 year; 1,791, or 45.8 per cent. in children under 2 years of age. The total number of births for the year was 7,855. Thus one child out of every seven died before the end of the first year." The writer goes on to show that the infant mortality of Milwaukee, "one of the healthiest cities in the world, with hardly any hot summer weather," is far in excess of that of New York City; indeed, to mention figures, it is stated, that "the infant mortality in New York City is over 7 per cent. lower

than in Milwaukee." As to the reasons for this condition the author says: "While many of these deaths are caused by want, neglect, overcrowding and bad hygienic surroundings, the vast majority are due to: 1. Maternal feeding badly managed, which soon leads to substitute feeding. 2. Substitute feeding ignorantly practiced. 3. Impure milk and prepared foods.

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It has been recently stated that the mortality following influenza in children is as high as 20 to 30 per cent. It seems that an inadequate resisting force, coupled with the tendency in early years towards marked acuteness, i. e., a rapid, quick, explosive character, is accountable for the figures given. The diminished powers of advanced years have always been recognized in connection with this disease; but it is quite likely we have not given sufficient attention to those in early years—to the possible outcome of their sufferings.

Early protection against complications, and an early conservation of the full strength of the little ones, is highly important. While we may not have specific means for controlling the disease, we certainly have the advantages of rest, protection and careful watchfulness within our power.

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Between a blind confidence in drugs which makes a fair estimate of therapeutics impossible, and an equally blind skepticism which nullifies therapeutics altogether, lies a golden mean of rational treatment, the results of which are at once an encouragement to the practicing physician and a stimulus to further effort to extend the usefulness of our art.—*Tyson*.

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An English physician has recently given utterance to the conviction, based upon a study of many cases belonging to different classes of society, that the tightly-laced corset has much to do with the condition of chronic constipation so frequent and so pronounced in women of the better class. It is held that the constriction of the form does not so much restrict the action of the organs of the thorax as those of the abdomen; and that the pressure upon and dislocation of the intestines interferes with their physiological peristalsis.

being so persistent and to such a degree as to bring on muscular inertia and chronic constipation. The degree of the result varies, of course, with the conditions of general bodily attention, diet, exercise, etc.

Logically, the giving up of the corset would be the first consideration in the matter of treatment; but along with this the use of small (drachm) doses of castor oil, continued for weeks, is recommended. The oil is to be taken once or twice daily, between meals. In very obstinate cases one-sixth to one-quarter of a drop of croton oil is wisely added. Nowadays, when a dose like this can be readily obtained enclosed in a soft capsule, the method is quite wholly deprived of objectionableness.

* *

Dr. W. O. Henry, of Omaha, in speaking of *Some Practical Points in Abdominal Section* (*Am. Jour. Obs.* Feb.) remarks: "That the stomach should be quieted down as soon as possible after taking an anæsthetic for any purpose, all surgeons agree, and especially is this true in abdominal section cases. Now, whilst the inhalation of strong vinegar, the use of bismuth and sips of hot water and bits of ice and mustard plasters and such like should all be remembered, and may prove useful at times, still I have found that one-twelfth grain of mur. of cocaine, dissolved in cold water and given every hour or two, comes nearer being a specific for nausea and vomiting than anything else I have ever used."

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But few cases are on record of ectopic pregnancy occurring twice in the same patient. Dr. C.B. Schoolfield, of Dayton, Ky., cites two such instances (*Lancet-Clinic*, Feb. 19) and mentions a dozen or so other instances reported.

* *

A case of antitoxin poisoning is reported by Dr. Morse, of Boston (*Bos. Med. and Surg. Jour.*, Feb. 17), in a male, thirty-two years old, and in apparently good health, except for a sore throat after a continuous exposure to diphtheria of a week or more. As a precautionary measure he was given 500 units of antitoxin (Mass. State Board of Health product). Severe symptoms soon followed, there being

chilliness, vertigo, nausea, alternating œdema in different parts of the body, urticaria and prostration. Later there was vomiting of bile tinged matter, and almost complete suppression of the urine. At the end of the first day a glandular involvement developed, continuing for ten days. "The glands of the groin became as large as walnuts." It is possible to explain the occurrence either by an unusual idiosyncrasy on the part of the patient, or some contamination of the antitoxin; but, as against the former it appears that the patient, some two years previously, "took seven cubic centimetres of Behring's antitoxin with no bad effects beyond a slight urticaria." Extreme caution should certainly be used that a fresh, aseptic and strictly reliable preparation be employed.

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Dr. J. H. Kellogg, of Battle Creek, Mich., in a recent address before the American Association for the Study and Cure of Inebriety, maintained that the relative and numerical increase in the number of imbeciles and insane of the present (being nearly three times as great as fifty years ago) is both caused by, and is the consequence of, drug addiction. Dr. Kellogg remarked that: "The majority of persons who acquire the vice of drug addiction are peculiarly constituted individuals, who may be divided into classes, as,

(1) Those who live upon the sense plain, regarding the body a harp of pleasure to be played upon so long as its strings can be made to vibrate by force of will or the aid of artificial excitements, and who, when the natural resources of the body are exhausted, seek artificial and unearned felicity through the aid of various nerve tickling, pain and trouble-annihilating, felicity producing drugs.

(2) Those hypersensitive, neurotic, delicately organized individuals, a rapidly increasing class, who are the natural result of the artificial brain and nerve-destroying and race deteriorating conditions of our modern life. These persons, lacking physical capacity for enduring the pains, hardships and tribulations of life, from which they suffer untold and indescribable agonies, seek relief in some nepenthe which promises them ease from the present stress of

suffering, overlooking all considerations respecting what the future may have in store for them."

Alcohol, in this consideration is regarded as a drug, and, with opium, is responsible for most of the evil produced. Dr. Kellogg has had a very wide observation of these cases, and his study of their characteristics and their treatment has been equally far-reaching as well as profound.

* *

Jonathan Hutchinson, the well-known London surgeon, has recently argued strongly in favor of early operation in cancer of the breast. He fully believes that cancer is a local process, although well recognizing that there is, no doubt, always a constitutional tendency. Instances are not at all now uncommon of long survival after a radical operations upon the breast, and Hutchinson mentions two cases operated upon in 1849, both living over twenty years thereafter.

* *

"We have sent forth a good deal of Seidlitz powder literature; literature which, read by the surgical aspirant, is as fuel to the fires of surgical aggression. While I have the utmost admiration for the bold surgeon, and think the very acme of the world's heroism was attained when Mrs. Crawford clasped hands with McDowell, and made her leap for life, my admiration for the bold surgeon warms into fervent flame of love when I learn that his boldness is always tempered by wisdom, and his conscience holds him firmly to the golden rule: "Whatsoever ye would that men should do unto you, do ye even so unto them."—Dr. Joseph Eastman, (*Am. Gyn. and Obs. Jour.* Feb.)

* *

It is often mentioned by the older practitioners that the aspects of a given disease or of a number of diseases, have changed since they entered the practice of medicine. The young man is quite likely to regard such a statement generously. But Dr. Joseph Collins strongly maintains that at least two diseases of common occurrence have distinctly changed in the last twenty-five years. Dr. Collins gives the following words as a statement of fact (*Med. Rec.*, Feb. 5.): "Every one who sees much of general paresis must

admit that the clinical features of the disease to-day are not the same as they were twenty-five years ago, and that the majority of cases do not conform in their symptomatic transformation is not exceptional in diseases of the less highly specialized systems of the body; typhoid fever, for instance, differs materially to-day in the way it unfolds itself from that seen by Gerhard, of Philadelphia, and Jackson, of Boston, who were the first to describe that disease in this country. When the nervous system becomes disordered in such a way as to constitute a definite disease, however, the symptoms that accompany are rather constant. In fact, general paresis would seem to be the only organic disease of the nervous system known, let us say to the previous generation of writers, that requires a re-statement of the symptoms."

* * *

Some misconception with reference to the position of the Michigan State Board of Health touching consumption has gained some ground, necessitating a reiteration of its acts and teaching. This official health body has always been scientifically aggressive and foremost in protecting the welfare of its people and is quoted far and wide. Its position, therefore, in the matter above mentioned is well to have clearly in mind. From the official proceedings we quote: "1. As a matter of fact papers were published by the State Board of Health bearing upon the restriction of tuberculosis before Doctor Koch discovered the germ; because, at that time, relative to tuberculosis, just as at the present time relative to scarlet fever, evidence had accumulated that it was a communicable disease. Papers relative to the restriction of consumption were published by the Board from time to time; and, in 1891, the Board published its formal document declaring consumption a communicable disease and pointing out its methods of spreading and how it might be restricted. This not being understood by the people of Michigan as requiring that the disease should be reported as a 'disease dangerous to the public health,' September, 1893, the Board, by resolution, formally declared consumption to be a disease 'dangerous to the public health,' referred to in sections 1675 and 1676, Howell's

Statutes, requiring householders and physicians to report to the local health officer, as soon as such a disease is recognized.

2. Isolation of the patient has never been recommended by this Board, except where the patient is "ignorant, insane or wilful, and will not use the proper measures for preventing the spread of the disease," then the question of isolation of the patient should be considered by the local health officer and local board of health.

3. Placarding of the premises where there is a case of consumption has never been recommended by this State Board.

4. Transportation of consumptive corpses has never been prohibited by the State Board of Health; it has no power to prohibit; that is not one of its functions. The railroads properly require that all corpses dead of communicable diseases must be prepared in accordance with their rules; and, if not so prepared, the railroads will not carry them.

Act 45, laws of 1895, requires that before a corpse dead of a dangerous disease can be brought into any township, city or village, the permission of the health officer or local board of health must be obtained."

* *

There is probably no thinking physician who has not at some time reflected upon that feature of a professional life which is concerned in the effort to prevent disease, and in proportion to the success thereof reducing the possibilities of a comfortable income. In other words the conscientious, high-minded physician advising and working for the physical betterment of his people, is working, and knows that such is the case, against his own worldly success. He strives to become a physician in order to minister to the welfare of sick people; and then he strives to overcome the causes of illness in order that people will not succumb thereto and thus demand his services. No wonder that the practice of medicine is held in high esteem by moral minds! No wonder its beneficent side is praised in song and verse!

An old practitioner of New York has recently said, in speaking of some of the conditions of present-day practice,—"And there is another condition of things, the bringing

about of which has reflected great credit upon the doctor, but also helped to reduce his earnings. I mean the better and healthier mode of living, the improved sanitary surroundings, the out-door life of the people, and their increasing cleanliness. The rules and laws of health and life have been preached by the physicians in public and in private all these years, and the inspectors of the board of health have insisted upon the observance of the same by the poor. Think, for a moment only, on the daily supply of pure water, milk and food to the inhabitants of this city, and compare what we have now with what we had to put up with twenty-five years ago! No wonder the public is better now, and the time may soon come when the functions of the general practitioner will be mainly those of the sanitary inspector, who looks after the health of his clients, gets his office free of rent, and is paid a fixed salary that is to come out of the money contributed by the tax payers of the city."

* *

Probably not frequently enough have reports touching the efficacy of diphtheritic antitoxin come from the general practitioner—from varying cases belonging to the varying surroundings of private practice. Hospital practice or a large city experience may give one kind of a result, for which the average practitioner always makes some allowance.

We have received a brief report from Dr. G. O. Switzer, of Pentwater, Mich., which is as convincing, and even more so, than any hospital report lately observed.

Dr. Switzer's cases all occurred under the ordinary circumstances of village practice, and were treated in several households under the differing conditions occurring therein. We quote the observer's own words in his letter.

Epidemic lasting from Oct. 1st to Dec. 15th, 1897.

Whole number of cases reported.....	45.
Number treated with antitoxin.....	31.
Number deaths under this treatment.....	2.
Number treated without antitoxin.....	14.
Number deaths under this treatment.....	6.

This shows a death rate of a little over 6% where Antitoxin was used, and a little over 42% where antitoxin was

not used, but these figures do not show the real facts of the case as in both instances where death resulted after antitoxin the patients were *moribund* before the remedy was administered. This would make a showing of 28 cases treated with not a single death, and 16 cases treated without antitoxin and 8 deaths. A mortality of 50% under the old plan of treatment shows that the epidemic was a very malignant one. Preventive or immunizing treatment was used in 31 cases previously exposed, and in only 2 of these did diphtheria develop, and in these 2 cases only one half the necessary amount of antitoxin was used on account of the scarcity of the remedy. In one of these (a 16 year old girl) diphtheria developed in mild form in about three days, but yielded immediately to a single injection of 1,000 units of antitoxin. The other case, (an 8 year old girl), showed no symptom of the disease for nearly four weeks, or not until she had had time to lose the effects of the antitoxin and be again exposed, as she was by coming in contact with other members of the family who had really recovered from the disease.

To immunize 500 units were used excepting in the two cases above mentioned.

As a curative agent 1000 units were used every 12 to 24 hours until improvement took place. In very severe cases 1500 units were used at a dose.

Two cases of laryngeal diphtheria were treated with antitoxin. One yielded immediately to the remedy; the other was moribund when the remedy was first used.

About 2000 units of "Mulford's" antitoxin were used and all the rest was from "Parke, Davis & Co.," of Detroit. Four cases of diphtheritic paralysis followed after recovery from the immediate effects of the disease. One, a *very bad* case of paralysis in a patient not treated with antitoxin and three *mild* cases where antitoxin had been used.

* *

The plague at Bombay, India, still continues but little abated, compared with a corresponding time of a year ago. Upwards of 100 deaths daily has been the record of late.

* *

It is reported that something like forty thousand men

are annually injured on the railroads of this country; and that this fact necessitates the retention of the six thousand railway surgeons with which we are credited.

* *

The Lancet editorially avers that "Quacks there have ever been and quacks there will ever be; but never, we believe, in the history of the world have the mendacious statements of the charlatan enjoyed such credit or his worthless wares been bought so cheerfully and so universally at such exorbitant prices as now at the end of the nineteenth century."

* *

"Sydenham led us back to Hippocrates; I would that we could be led oftener to Sydenham. How necessary to bear in mind what he says about the method of the study of medicine. 'In writing, therefore, such a natural history of diseases, every merely philosophical hypothesis should be set aside, and the manifest and natural phenomena, however minute, should be noted with the utmost exactness. The usefulness of this procedure can not be easily overrated as compared with the subtle inquiries and trifling notions of modern writers, nor can there be a shorter, or indeed any other way of coming at the morbid causes or of discovering the curative indications, than by a certain perception of the peculiar symptoms? By these steps and helps it was that the father of physic, the great Hippocrates, came to excel, his theory, being no more than an exact description or view of Nature. He found that Nature alone terminates diseases, and works a cure with few simple medicines, and often enough with no medicines at all.' Well indeed has a recent writer remarked, 'Sydenham is unlike every previous teacher of the principles and practice of medicine in the modern world.'"—*Osler*.

* *

The scourge of syphilis has been the most deadly enemy to the upward progress of the human race the world has ever seen. Its disintegrating power in destroying human life has been greater than even pestilence or the sword. Millions upon millions of the human family who have never

seen the light of day have been sacrificed *in utero* by embryonic infection to gratify this insatiate moloch of death. Acquired in one generation it insidiously propagates itself to future generations until who can tell where its baneful influence begins or ends? It masquerades under so many assumed names and in so many unexpected guises that it often baffles and eludes the skill of the most careful diagnostician to locate it. Its peculiar affinity for attacking the brain and nervous system is one of the marked features of its history, and yet it was long before neurologists discovered its potency as a factor in producing insanity. That fatal form of insanity known as general paresis, or as it is now called general paralysis of the insane, is now recognized by high authority as in every case due to this virulent poison. All authorities are agreed that it is the most common cause in producing this and other kindred diseases affecting the brain and nervous system.—*Russell on the Relation of Insanity to the State: Brit. Med. Ass'n., 1897.*

Book Reviews.

AN EPITOME OF THE HISTORY OF MEDICINE.—BY ROSWELL PARK, A. M., M. D., Professor of Surgery in the Medical Department of the University of Buffalo, etc. Illustrated with Portraits and other Engravings. One Volume, Royal Octavo, pages xiv—348. Extra Cloth, Beveled Edges, \$2.00 net. The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street, Philadelphia; 117 W. Forty-Second Street, New York; 9 Lakeside Building, Chicago.

We are unequivocally convinced of the importance of the very first words our eyes meet upon opening this volume, namely, that "The history of medicine has been sadly neglected in our medical schools." It quite goes without the saying that one of the most powerful incentives to a present moral force is the knowledge of a dignified past. And if the profession of medicine is to rise to a higher plane it will be by virtue of historical examples. Hence it is that medical schools should teach, and strongly, though it may be briefly, the history of the science and art the young minds are entering upon. It would be a stimulus to the further and the keener pursuit of things medical; it would bring about a wider range of ideals; it would strengthen encouragement at difficult times; and it would make a better student and, afterwards, practitioner. "Sufficient for the day is the evil thereof" scarcely applies to medicine. We should know something of yesterday in order the better to be prepared for tomorrow.

In this volume Dr. Park does not pretend to go into the history of medicine *in extenso*, but aims rather at furnishing an outline to know which will give one a good general knowledge of the subject. It is such a book as the student can well afford to obtain and become familiar with; and it is also an excellent "starter" for the practitioner who, having long neglected the history of the profession, desires to supply the want. The basis of the present book is a series of lectures upon the topic delivered by the author to his stu-

dents at the Medical Department of the University of Buffalo.

It is quite unnecessary to enter into any detailed review of this book; suffice it, therefore, to say that the subject is considered from remote times along through the middle ages and up to the present remarkable era of progress. The last chapter is given to a brief history of dentistry. The volume contains nearly sixty illustrations, mostly of famous medical men of the past.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS, with especial reference to the application of Remedial Measures to Disease and their Employment upon a Rational Basis. By HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, etc. With special chapters by Drs. George E. de Schweinitz, Edward Martin and Barton C. Hirst. Sixth edition, thoroughly revised and largely rewritten. In one octavo volume of 756 pages. Cloth, \$3.75; leather, \$4.75. Lea Brothers & Co., Publishers, Philadelphia and New York, 1897.

[*Erratum*.—An error occurred in placing the title of Hare's Practical Therapeutics over a review of Hare's Practical Diagnosis in the January issue of this magazine. The subjoined review, therefore, should not be confounded with that which appeared in January under a misleading title.—EDITOR.]

Next to the pleasure given by the clinical evidence of the value of our materia medica in the treatment of disease, is that of reading works on Materia Medica and Therapeutics. Earlier authors regaled their readers with statements of absolute confidence in the potency of their potions. It must ever have been refreshing to the devotees of medicine to take up such a work and read the expressions of confidence in the power of medicine to alleviate suffering and remove disease. The possibilities of learning from such sources of the means by which the practitioner of medicine could assail disease with every assurance that the agents used would enable him to successfully control or destroy it was refreshing to the weary plodder in medicine as he pursued his way in the unending contest with disease and suffering.

From the days of primitive physic until now it has been,

is, and will be a source of great pleasure to accept with confidence the statements found in works on therapeutics. But, be it said in these later days to the great gain of scientific medicine, the domination of authority is not as it was, and no where is this break with authority more apparent than in relation to therapeutics. The "*post hoc ergo propter hoc*" will not be accepted unless established by a long and carefully analyzed series of sequences clearly connected with the agent or means used. A rational and satisfactory explanation of the relation of the means to the result must be had before we have positive therapeutics. We are undoubtedly approaching such accuracy.

After all we must appeal to clinical demonstration for the principal and essential evidences of the value of our remedial agents. It cannot be claimed that brilliant achievements have been made in the use of drugs, but there has been steady and satisfactory progress in clearing away the mists of ignorance in their use, and toward a rational explanation of their action.

In the work, the object of our interest at this time, there is a happy blending of attention to the empirical, clinical and scientific in view of reaching valuable, practical results. This statement is made in the preface to the first edition of Hare's Practical Therapeutics "the object of the book is to provide the physician or undergraduate student of medicine with a reliable guide in the study of therapeutics, or the application of remedial measures for the cure of disease."

It is evident from the expression in the preface to the fourth, and in this, the sixth, edition, that Dr. Hare's fondest hopes have been realized in the generous reception given his work. This has been shown by the rapidity with which one edition has succeeded another, until, since 1890, six editions have reached the reader.

We have in this book an excellent illustration of what may be done by conciseness of method, and by sufficient breadth of discussion, to fully accomplish what is proposed, as stated by the author. "It was written for the reason that the author appreciated, as a practitioner and teacher, that many of the works upon this subject contained a vast amount

of information so compiled as to be almost useless, because the reader is forced to discover for himself what is worthy of confidence. For this reason, remedies which are so rarely employed as to be curiosities are not discussed in this volume, and the space so saved is utilized in rendering rational the application of well-tried remedies both new and old."

The work as a whole covers a very broad field; part first being devoted to the consideration of "General Therapeutics," and part second to "Drugs." Though the designation may sound somewhat harshly to modern ears, yet there is nothing of crudity in their consideration, but thoroughly up to date.

Part third, though short, is of great value, and broadens in a very satisfactory way the resources of the medical art by means other than drugs, and helps us away from unpleasant associations. This part is quite too short. An entire volume from Dr. Hare on remedial measures other than drugs and food for the sick would find a useful place and be well received by the profession.

Part four attempts to cover a broad field, and takes nearly half the space from cover to cover, and in some respects is a work on the practice of medicine in its practical relations to many of humanity's graver ills, all of much value, and very entertaining reading. More than two hundred pages are devoted to the therapeutics of special diseases.

As an evidence of the range of topics and the somewhat curious result growing out of the general alphabetic plan adopted in this work the part relating to diseases begins with abortion and ends with worms. Between the former and the latter, many of the most trying diseases, both to patient and physician are treated of in a most satisfactory way.

In connection with these remarks, suggested by a hasty glance at this valuable work—a work in every way worthy of careful study—it occurs to us that this volume, though of earlier origin, is the complement of one of Dr. Hare's other works that has also received a very flattering reception on the part of the profession. We refer of course to his book on practical diagnosis—the second edition of which is just from

the press. The latter aiding one to make an accurate diagnosis and the former suggesting the remedies. The two harmoniously blending and covering a very large part of the field of practical medicine.

While not without their scope—yet the frequency with which clear ætiological references are made (and pathological as well) the two books together make up a harmonious, useful and safe practical guide to the general practitioner that should have a conspicuous place on the reading table and their pages show the evidences that they had been made the frequent subject of reference and study.

Space will not permit even a reference to many of the valuable and entertaining articles in this book that will continue to be a favorite with the medical profession, and that has, or should have, a place in every well selected medical library. Yet we will say more—and state it as it should be—the cream of the contents of Hare's Practical Therapeutics should be stored in the medical mental store-house of every practitioner of medicine.

Finally we know of no work on the medical market more thoroughly up-to-date and of greater practical value to the so-called and oft-commiserated busy general practitioner of medicine, than this one of Dr. Hare's on therapeutics. It is not necessary to wade through a mass of obsolete matter to get at gems of truth. It is not loaded with expressions of over confidence in the possibilities of special agents, but seeks to supply actual facts and safely guide to a rational and reliable use of therapeutic means in the treatment of disease.

E. P. C.

MANUAL OF GYNECOLOGY—By HENRY T. BYFORD, M. D., Professor of Gynecology and Clinical Gynecology in the College of Physicians and Surgeons of Chicago; Professor of Clinical Gynecology in the Woman's Medical School of the Northwestern University, Professor of Gynecology in the Post-Graduate Medical School of Chicago. Second edition, cloth, \$3.00. P. Blakiston, Son & Company. Philadelphia, 1897.

In his "Manual of Gynecology" Professor Byford has furnished the profession with a work of peculiar value. To

the general practitioner it is particularly so. While entitled "a hand book," it is exceptionally complete in its compass as a work of reference. Its arrangement, while unique, is practical, and the marginal index to the present edition is a considerable convenience. As must be expected in a treatise of the kind it is somewhat dogmatic in expression, but the author is fortunate in knowing just how far to go without provoking criticism as to mooted points, and at the same time drawing valuable conclusions from the data of his own rich experience.

One thing else commending the work to the consideration of most practitioners is the author's evident appreciation of the value of trite English words and phrases, and parenthetical comparison of the English and decimal systems. We consider it one of the great mistakes of recent authorship to omit this latter evident factor in the education of the thousands of medical men whose degrees antedate the newer *regime*, and who have neither the time nor inclination to familiarize themselves with this feature, excepting by constant comparison in direct connection with the text of their books of reference.

We have gone pretty carefully over this work of Dr. Byford's and while there are points in the elucidation of which argument is strongly invited, we feel that it is the most comprehensive and useful work of its class that has fallen under our notice, and as such most heartily recommend it to practitioners generally as embodying in the main the most reliable information on the subjects of which it treats. The introduction in this edition of new chapters and parts of chapters on subjects of greatest moment adds much to its value. In fact it bristles, so to speak, with diagnostic points and therapeutic facts, whose accuracy can seldom be questioned. In fine, this is a volume which one can profitably take up during even a few minutes of leisure, for it is a "handy" one in every sense of the term.

O. B. W.

Review of Clinical Literature.

Being a List of the Leading Clinical Articles of the Past Month:

Arranged Alphabetically by Title, Giving Author and Reference
MEDICINE.

- Arrested Development and Little's Disease—W. G. Spiller—*Jour. Nerv. & Ment. Dis.*, Feb.
- Chorea, A Clinical Re-examination of the Motor Symptoms of—S. Weir Mitchell and J. H. W. Rhein, Phila.—*Phila. Med. Jour.*, Jan. 22.
- Diphtheria, An Experience of 96 Cases in Private Practice—W. C. Aylward—*Brit. Med. Jour.*, Jan. 15.
- Diphtheria, Acute Degenerations of the Nervous System in—J. J. Thomas, Boston,—*Boston Med. & Surg. Jour.*, Jan. 27, Feb. 3 and 10.
- Diphtheria, Heart Complications in—C. M. Hibbard, Boston—*Boston Med. & Surg. Jour.*, Jan. 27 and Feb. 3.
- Diphtheria, An Epidemic of, Demonstrating in a Marked Degree, its Contagious Nature, and the Value of Immunization—J. L. Berry, N. Y.—*Med. Rec.*, Feb. 12.
- Eye and its Appendages, Some interesting Syphilitic Affections of the—H. Juler, London—*Phila. Med. Jour.*, Feb. 12.
- Epilepsia Alkoholica—H. Stern, N. Y.—*Quar. Jour. Inebriety*, Jan.
- General Paresis: Remarks on its Present-day Clinical Delineation—J. Collins, N. Y.—*Med. Rec.*, Feb. 5.
- Lepra Anæsthetica—C. C. Hersman, Pittsburgh, Pa.—*Alienist & Neurol.*, Jan.
- Multiple Sclerosis in Childhood, with a Report of Three Cases—L. Stieglitz, N. Y.—*Am. Jour. Med. Sci.*, Feb.
- Multiple Sclerosis, The Relation of to Cerebro-Spinal Syphilis and to Paralysis Agitans—B. Sachs, N. Y.—*Phila. Med. Jour.*, Feb. 5.
- Myxœdema-Like Conditions in the Negro—H. J. Berkley, Baltimore—*Am. Jour. Ins.*, Jan.
- Pneumonia, Suggestions as to Prophylaxis, Contagion and Treatment of—B. Robinson, N. Y.—*Med. Rec.*, Feb. 19.
- Pneumonia, Delayed Resolution in, and its Treatment—A. Stengel, Phila.—*Therap. Gaz.*, Feb.

Dr. A. C. Klebs, of Chicago, in commenting upon the *Diagnostic and Therapeutic Value of Tuberculin and its Derivatives*, (*Bos. Med. & Surg. Jour.*, Feb. 17) concludes:

“(1) That tuberculin is a most valuable aid in the diag-

nosis of early human tuberculosis, with due observation of limitations.

(2) That there is no danger in its application as a diagnostic test.

(3) That a tuberculin prepared always after the same method and standardized by previous animal tests should be used in order to insure uniformity of results.

(4) That the therapeutic value of the crude tuberculin is limited by its injurious by-effects.

(5) That the method of preparing the new tuberculin of Koch makes it impossible to exclude contamination with other bacteria and therefore renders it dangerous for *therapeutic* purposes.

(6) That also a non-contaminated preparation of new tuberculin offers the same and even greater dangers in its application as a *remedy*.

(7) That by elimination of certain toxic substances from any of the tuberculin preparations (or perhaps by their passage through an animal body), a preparation (tuberculocidin) can be obtained, curative properties of which can be demonstrated in animal experiments, and which seems to influence beneficially early cases of pulmonary tuberculosis.

(8) That we have no remedy and probably never will have a remedy of absolute certainty in tuberculosis in its different stages; and that the eradication of the disease can be successfully attempted only by the united efforts of the different communities; by rigidly enforced methods of prevention; by isolation of already infected cases in well-directed special institutions and by the general education of the public on the subject—in one word, by a sincere fight, like the one now so successfully undertaken in this state of Massachusetts."

SURGERY.

Appendicitis, Interval Operations in, Chiefly for Relapse, with a Table of Cases—G. Barling, Birmingham, Eng.—*Brit. Med. Jour.*, Jan. 29.

Bladder, Four Cases of Stone in the, with Hypertrophy of the Prostate Gland, where Positive Diagnosis was Impracticable until Double Castration Resulting in Atrophy of the Prostate Rendered the Passage of a Stone-Searcher Possible—O. Horwitz, Phila.—*Therap. Gaz.*, Feb.

Brain, A Report of Five Cases of Abscess of the in Infants, Together with a Summary of 27 Collected Cases in Infants and very Young Children—L. E. Holt, N. Y.—*Arch. of Ped.*, Feb.

Heart, Danger of Injury to the, in the Tapping of the Pericardium for the Relief of Pericardial Effusion—H. Hare, Phila.—*Therap. Gaz.*, Feb.

Heart and Brain, 35 Cases of Injury of the—W. B. Lowman, Johnstown, Pa.—*Phila. Med. Jour.*, Feb. 12.

Iris, Primary Sarcoma of the—C. A. Veasey, Phila.—*Jour. Am. Med. Ass'n.*, Jan. 22.

Dr. Chas. L. Scudder, surgeon to the Massachusetts General Hospital, of Boston, interestingly reviews the literature and history of the ambulatory treatment of fractures of the lower extremity (*Bos. Med. and Sur. Jour.*, Feb. 3), and gives his own experience and conclusions in regard thereto. While it is recognized and admitted that the ambulatory method with a fixed dressing is advantageous in the matter of getting the patient about and out of the hospital or his residence, yet in the long run, so to speak, it is questionable if the plan is a distinct advance in means. Dr. Scudder says in the concluding paragraphs of his report.

"In reviewing carefully the literature I am unable to discover any advantage in the results of the ambulatory treatment over the present modern treatment of fractures of the leg.

The present commonly accepted method of treating *uncomplicated* fractures of the leg by allowing the initial swelling to subside, by the application of a plaster-of-Paris splint, later by the splitting of this plaster splint and re-applying it with a retentive bandage, by permitting the patient to be up and about on crutches and the well leg at the end of two weeks, by the subsequent removal of the plaster splint; by passive and active motion and massage to the knee and ankle joints; by the gradual bearing of all the weight upon the fractured bone—this roughly outlined present treatment is satisfactory.

The present commonly accepted method of treating fractures of the femur by long rest in the horizontal position, with extension by weight and pulley, is not satisfactory. The protracted stay in bed is undesirable. The use of the Taylor hip-splint in the treatment of this fracture, assisted

by coaptation splints or plaster-of-Paris is of distinct value.

Two fundamental principles in the treatment of fractures must be constantly in mind when new methods are being discussed, namely, the reduction and the absolute immobilization of the fractured bone.

Theoretically and practically the ambulatory treatment does not perfectly immobilize; therefore I believe it cannot pre-eminently succeed as a means of treatment. However, in certain carefully selected cases of fracture below the knee, particularly of the fibula, if under the care of a competent and skilful surgeon, it is possible to conceive of the ambulatory method being used without doing harm.

The method in general seems to me to be unsurgical. Embolism, both of fat and of blood, and the likelihood of pressure sores in the use of the plaster splint are dangers to be considered. It is wise for the injured limb to rest while the reparative process is commencing. Muscular relaxation is desirable in the treatment of fractures. The very admission by the advocates of the ambulatory treatment that muscular contractions take place is reason enough for supposing that complete immobilization is not obtained by this method.

A consideration of the ambulatory treatment of fractures will have served a positive good if it shall lead to a more careful use of the plaster-of-Paris splint in fractures of the leg and to a proper application of the long hip-splint or its equivalent in fractures of the thigh and to the early use of crutches and the high sole on the well foot in both of these lesions."

OBSTETRICS.

Abdominal Section, Some Practical Points in—W. O. Henry, Omaha—*Am. Jour. Obs.*, Feb.

Cæsarean Section and Symphyseotomy, With Report of Cases—E. P. Davis, Phila.—*Am. Jour. Obs.*, Feb.

Cæsaren Section, Two Cases of—J. W. Carstens, Detroit—*Am. Jour. Obs.*, Feb.

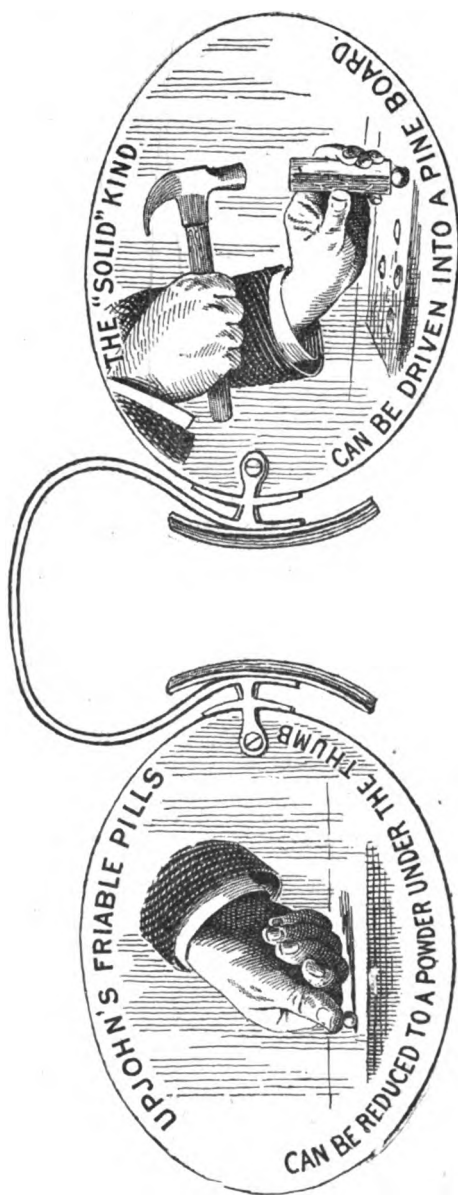
Extra-uterine Gestation—A. W. Mayo Robson—*Brit. Med. Jour.*, Jan. 29.

Reporting two cases of Cæsarean section in the *Amer. Jour. Obs.* Feb., Dr. J. H. Carstens, of Detroit, Mich., com-

ing to the question of symphyseotomy as it arises in these special cases of dystocia says:

"In this connection comes up the question of symphyseotomy, and undoubtedly, in some of these cases, symphyseotomy will help us to deliver a woman even of a living child, if it is small. Still, from the records of symphyseotomy as I have been able to interpret them, performed in various parts of the world, it is not more favorable, if it is as favorable as a Cæsarean section. I have no doubt it depends a good deal upon the man who has the case. The so-called obstetrician, purely, will advocate and practice symphyseotomy, an abdominal surgeon will naturally be inclined to do a Poro-Cæsarean section, as he has confidence in himself and knows that the danger is but very little. After symphyseotomy, sometimes the child's life must be sacrificed after all, and sometimes an abdominal section made; and then after symphyseotomy the woman has often a slow convalescence, frequently the bladder is injured, and sometimes absolute inability to walk follows. These are still moot questions, it seems to me, and it is only by careful selection of cases, considering the environments, the conditions which produced the difficult labor, the size of the child, and every other point bearing upon the question—these must be considered in each individual case; then a decision can be reached, and thus it will be found that each case is a law unto itself."

WHAT THE DRUGGIST SEES

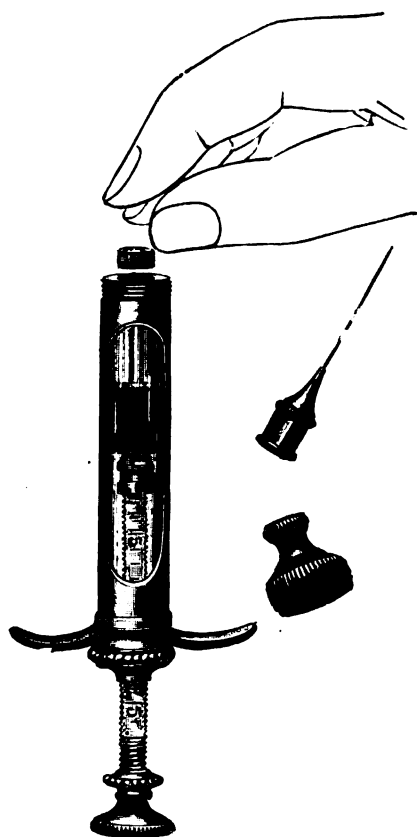


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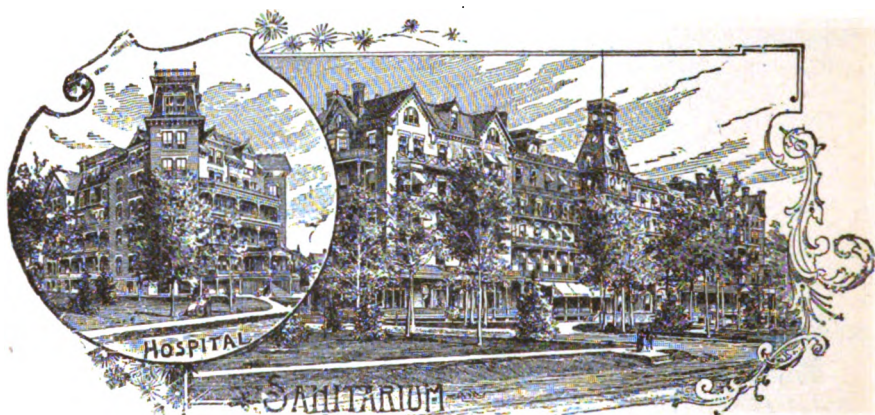
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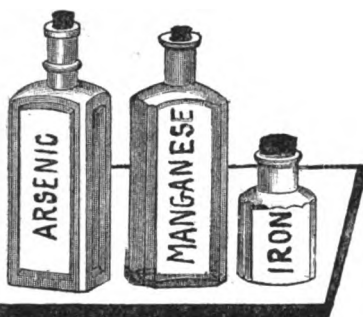
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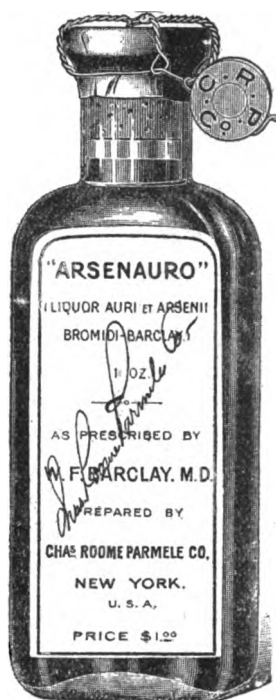
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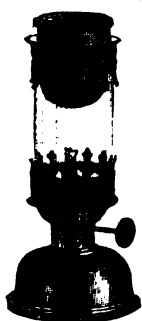
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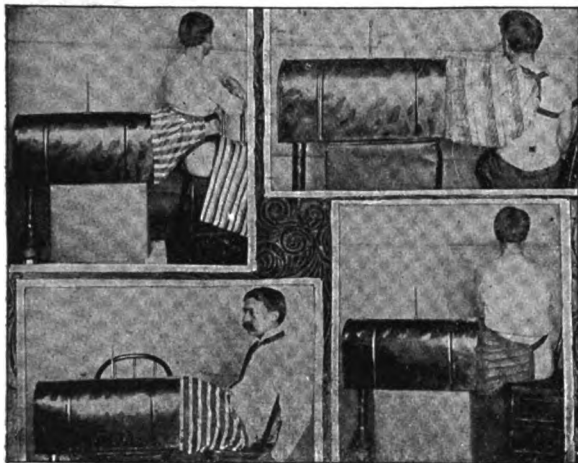
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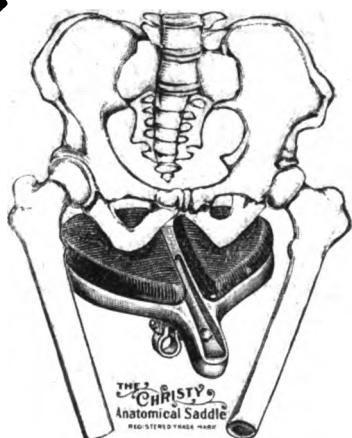
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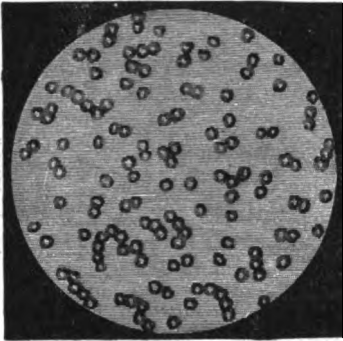
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says:- "I have used Platt's Chlorides as a vaginal douche in the proportion of one part chlorides to thirty-two parts water, and in cases of very offensive discharges, one to sixteen, with very satisfactory results".

Platt's Chlorides, **The True Disinfectant.**

An odorless, colorless liquid; powerful, safe, and economical; sold in quart bottles only, by druggists everywhere. Prepared only by Henry B. Platt, Platt Street, New York.

When the term "peroxide of hydrogen" is employed, Marchand's preparation is nine times out of ten, understood, and *Hydrozone* is the name now given by Marchand to what was formerly called the peroxide of hydrogen, the difference being that *Hydrozone* is about twice the strength of the old preparation. See that you get the right article.

Dr. John Aulde, of Philadelphia, has recently spoken very highly of the use of *Hydrozone* in the treatment of specific urethritis and vaginitis, and also regards it the best remedy for cystitis either in the male or female.

The "Yale" Chair is probably the most popular and durable one in the market today. It is not complicated and will be found highly satisfactory.

Kindly notice carefully the page statement of the Bovinine Co. You can't miss it and its message is a wholesome one to have in mind.

Pabst "Best Tonic" should give the highest satisfaction where a malt tonic is desired. Certainly the Pabst Co. enjoy to best of facilities, and obtain the choicest products.

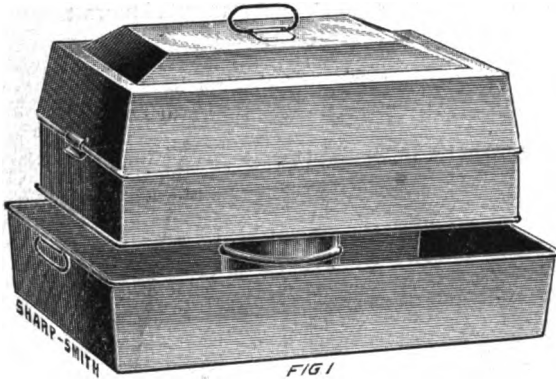
Pure milk is a "desideratum devoutly to be desired" by the city practitioner. We do not believe any disappointment will follow the use of that delivered by the Jersey Co.—a firm of unquestioned reliability.

There are thousands of conscientious, upright, honorable pharmacists who would no more think of substituting than they would of trying to pass a counterfeit bill. Some of these are located in our city Patronize them exclusively.

I have given your Bromidia with success as a remedy for insomnia, especially where produced by excessive study or mental work.—Dr. Luigi Salucci, Physician to the Holy Apostolic Palaces, The Vatican, R. to me.

A NEW PORTABLE STERILIZER.

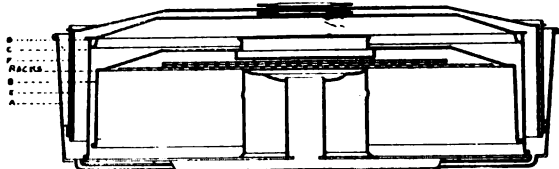
FOR THE



general practitioner;
made light, compact,
and large enough for
all instruments and
dressings used in or-
dinary operations, in-
cluding laparotomies,
etc.

Price \$10.00.

**Descriptive
Circular
Mailed on
Application.**



SHARP & SMITH,
73 RANDOLPH ST. CHICAGO.

For Eastern travel, especially via Niagara Falls, the Grand Trunk Railway offers the highest class service in every particular. Clean and well ventilated cars having every comfort; attentive servants, intelligent trainmen; fast time; good connections with other lines, and a deep interest in well serving the public has won commendation on every hand.

For any drug or preparation that you can't find elsewhere, go to Dale & Sempill, and the chances are that you will be readily supplied. They carry a very extensive stock, and are chemists of the first rank.

An exhaustive report by the well known physiological chemist, Prof. R. H. Chittenden of Yale, would seem to justify the claims set forth by the American Ferment Company regarding their new vegetable digestive agent "Caroid."

If a physician ever finds it necessary to resort to predigested food to supply nourishment in an immediately assimilable form to sustain life, he will find Armour's Nutrient Wine of Beef Peptone the ideal preparation. Nutrient Wine is made from lean beef predigested and sterilized and a good, sound Sherry. Each ounce contains the entire digestible substance of one ounce of lean beef. □

The Upjohn Pill and Granule Co., of Kalamazee, Mich., have long enjoyed a high reputation for pharmaceutical skill in the manufacture of pills. "Upjohn Pills" are known almost everywhere—and known very favorably.

No more reliable manufacturer can be found anywhere than A. A. Marks maker of artificial limbs and appliances. Established years ago, this house has supplied the world.

"YALE" SURGICAL CHAIR.



Fig. I—Normal.

The **ONLY** chair in which all the movements known to modern surgical and gynecological work are combined, together with new and valuable features. It is simple in mechanism, strong in construction, beautiful in design and easily understood and operated.

Send for Catalogue.



Fig. IX—Chloroform Position.



Fig. XVII—Dorsal.

A few of the positions are: normal, reclining, semi-reclining, horizontal, $\frac{1}{4}$ length, dorsal,

Sim's, right or left lateral oblique, dorsal with hips raised, side tilt, raising or lowering, chloroform narcosis, rotating, etc.

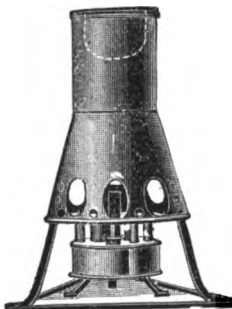
CANTON SURGICAL AND DENTAL CHAIR CO.,

38 to 54 East Eighth and 50 to 52 South Walnut Streets, CANTON, OHIO.

Sole Manufacturers of Canton Surgical Chairs, Yale Surgical Chairs, Gould Dental Chairs, Fletcher Fountain Spittoons, the New Cable and Gould Cord Dental Engines, &c.

Hermann's pharmacy is a recognized headquarters for supplies of all kinds. Prompt and intelligent service has won a confidence of which any merchant might well feel proud.

The Schering & Glatz formalin lamp is



valuable.

the thing for the generation of pure formaldehyde gas—the ideal disinfectant. Note the announcement in this issue of the REVIEW. It is interesting and

Notice the new advertisements in this issue; yet do not lose sight and knowledge of the older ones in so doing.

The Consumers Co., "the largest artificial ice and water distilling plant in the world" has an interesting announcement in the present issue. Our Chicago readers, as well as visiting physicians from out of the city, will always find a cordial welcome at this institution; and will be more than repaid, in a knowledge of these modern processes, for the amount of time given.

The old-reliable, well-established cod-liver oil preparation is "Scott's Emulsion." For twenty-five years it has been in use and has preserved its standard of quality unchanged.

Fellow's Hypophosphites, a standard preparation of widely-known value, is represented prominently to readers in the present number. Courteous response will be made to any pertinent inquiry directed to Mr. Fellows, 48 Vesey street, New York City.

E. VON HERRMANN'S .. PHARMACY ..

N. E. COR. 81st STREET AND INDIANA AVENUE,

Carries a Complete Stock of all

Standard Preparations

Also a Well-Assorted Stock of

**Fever Thermometers, Hypodermic Syringes, Steam, Vaseline, and all kinds
of Atomizers, Sterilizers, Absorbent Cottons, Bandages,
Plasters, Etc., Etc.**

**Prescriptions filled by Competent Pharmacists only, with the Utmost
Care and Dispatch.**

Store OPEN ALL NIGHT with Full Messenger Service.

Telephone 8180.

THE CLINICAL REVIEW is the largest original medical monthly in the west and enjoys the confidence of a large and rapidly-increasing list of readers.

Notice the revised and extended list of collaborators—recognized teachers throughout the great central west.

“Fresh—Bright—Clean.” The leading magazine.

Taka-Diastase is now marketed in three forms—in Powder, in $\frac{1}{4}$ -, $\frac{1}{2}$ - and 1-ounce vials; Capsules, 2½ grains each, in bottles of 25, 100 and 500; and Liquid Taka-Diastase, 8 ounce bottles only, 2 grains of the ferment to each fluidrachm.

In a recent circular Messrs. Parke, Davis & Company state: “We have introduced Liquid Taka-Diastase to meet the demands of those who object to both powders and capsules. In order to satisfy such patients, we know a number of instances where solutions have been prepared extemporaneously but with medica-

ments or vehicles with which Taka-Diastase is incompatible. Of course, failure in such instances was unjustly attributed to Taka-Diastase. Liquid Taka-Diastase will in future, however, most satisfactorily take care of all such cases.

“Under no circumstances should Taka-Diastase be massed. It should be administered either in powders, in capsules, or the liquid form, and during or immediately after meals.”

If not already familiar with Taka-Diastase, write the manufacturers at once for monographs, reports of cases, reprints of articles, etc. Taka-Diastase is certainly the remedy in amylaceous dyspepsia.

Sharp & Dohme's soluble hypodermic tablets are satisfactory to the highest degree. Ready solubility is an advantage immensely appreciated at the bedside of the critically sick one, when seconds are as minutes at any other time and minutes are as hours.

Hot Springs, Arkansas.

VIA THE

Wabash Line

Have you had the grippe? Do you feel 100 years old? Can't you get rid of that cold? Buy a ticket to Hot Springs, Ark.; and leave Chicago on the **Wabash** 11 a. m. train, which will land you in Hot Springs next day at noon. Direct connection at Union Station, St. Louis, with through service to Hot Springs. Two other Wabash trains if this doesn't suit you. Write for printed matter.

Ticket Office, 97 Adams St., Chicago.

A practitioner of wide experience says:—"I have used Lambert's Lithiated Hydrangea on various persons affected with diverse and painful manifestations of chronic rheumatism, gout, lithiasis-urica, nephritic calculus and functional disturbances of the renal system, with excellent results, and I consider it a valuable remedy for normalizing the renal function, for promoting the active elimination of uric acid and to calm the congestive conditions of the kidneys and of the urinary mucous membrane."

CONTINUED GOOD RESULTS.

The January, 1894, number of *The Quarterly Journal of Inebriety* published under the auspices of the American Association for the Study and Cure of Inebriates, Hartford, Conn., U. S. A., says through its able editor, T. D. Crothers, A. M., M. D.—"Antikamnia is one of the best remedies in influenza, and in many instances is very valuable as a mild narcotic in neuralgias from alcohol and opium excesses. We have used it with best results."

Reed & Carnick, of New York City, have placed many new drugs and food preparations in the physician's hands, and have always endeavored to improve upon previous efforts. They are proverbially progressive in anticipating the doctor's wants. See their present announcement.

Lactopeptine preparations have become so thoroughly recognized for their pharmaceutical excellence and intrinsic worth that many physicians—a great many—depend strongly upon them. Lactopeptine products and Liquid Peptonoids have become standard far and wide.

Notice Fairchild Bros. & Foster's announcement on the back cover. This substantial and courteous firm can always be relied upon to furnish the choicest products, and will be ready to extend any information and assistance within its power.

ARTIFICIAL LEGS AND ARMS FOR PRAGTICAL PURPOSES.

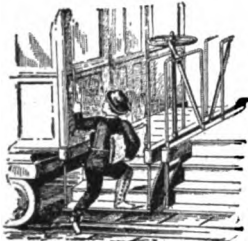


A. A. MARKS,
701 Broadway, New York.
DEAR SIR: I received the pair of artificial legs made for me in due time; they fitted perfectly and I have worn them constantly from the start. I work in the store from 6 o'clock in the morning until 10 at night. The limbs are lighter than I expected and appear to be very strong.
E. B. SCULL,

A. A. MARKS, 701 Broadway, New York.
DEAR SIR: My right leg was amputated four inches above the knee. In 1886 I purchased an artificial leg of you. I am compelled to say after ten years of constant use I am convinced that I made no mistake in taking your patent. My occupation is farming; I often saw wood all day; I have picked one hundred pounds of cotton in a day, and that was about as much as I was able to pick before I lost my leg.
J. D. CLECK.



A. A. MARKS,
701 Broadway, New York.
DEAR SIR: I have worn one of your rubber feet for over 15 years with entire satisfaction. I am a truckman and have to lift several hundredweight at a time.
C. H. BREWSTER.



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DEAR SIR: I sell morning papers on the railroad trains, frequently getting on and off a train when in motion. Very few of my friends know that I lost one of my feet.
JNO. SCHARFF.

Send for Marks' Treatise on Artificial Limbs. 644 pages and 800 illustrations. A complete work on the restoration of the maimed and crippled.

A. A. MARKS,
701 Broadway, New York City.



Confidence Well Placed.

December 6, 1897.

JOHN CARLE & SONS.

NEW YORK CITY.

GENTLEMEN:—You can be assured that I will prescribe the **IMPERIAL GRANUM**, whenever there is an indication for a prepared food, because I had sufficient confidence in it to give it to my own child, and it agreed with him perfectly; and he has increased in size and weight to an astonishing degree. — **M. D.**

Physicians can obtain samples of this celebrated prepared food free, charges prepaid, on application.

RHEUMATISM.

There are many cases of rheumatism in its various forms, which otherwise prove most obstinate and unyielding, but which can be cured speedily and thoroughly by the use of Tongaline Liquid or Tongaline Tablets or Tongaline & Lithia Tablets or Tongaline & Quinine Tablets, as the condition may indicate, all to be taken at short intervals and washed down

with plenty of hot water, as hot as the patient can bear it.

This treatment can be supplemented by the local application of Tongaline Liquid; or the disturbing effects of internal medication upon an irritable stomach and sensitive nerves can be avoided by the external use of Tongaline Liquid alone.

The affected parts should be sponged first with alcohol, then with Tongaline Liquid, and cloths saturated with the remedy held in apposition by oiled silk bandages applying heat by a hot water bag or other convenient method to facilitate absorption. Tongaline Liquid, in like manner, may be given externally by the aid of electricity.

The Betz hot air bath is achieving marked recognition as a valuable local method of treatment in localized painful and inflammatory affections. It is certainly worth looking into carefully.

Gray's Glycerine Tonic Comp.

(Glycerine, Sherry Wine, Gentian, Taraxacum, Phosphoric Acid, Carminatives.)

Formula DR. JOHN P. GRAY.

Neutralizes Acidity of the stomach and checks fermentation.

Promotes appetite, increases assimilation and does not constipate.

Indicated in Phthisis, Bronchitis, Anaemia, Malnutrition, Melancholia, Nervous Prostration, Catarrhal Conditions, General Malaise.

THE PURDUE FREDERICK CO.,

No. 52 West Broadway, New York.

Write for Samples.

SYR. HYPOPHOS. CO., FELLOWS

Contains the Essential Elements of the Animal Organization—Potash and Lime;

The Oxidising Agents—Iron and Manganese;

The Tonics—Quinine and Strychnine:

And the Vitalizing Constituent—Phosphorus; the whole combined in the form of a Syrup with a Slightly Alkaline Reaction.

It Differs in its Effects from all Analogous Preparations; and it possesses the important properties of being pleasant to the taste, easily borne by the stomach and harmless under prolonged use.

It has Gained a Wide Reputation, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic, and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt; it stimulates the appetite and the digestion, it promotes assimilation, and it enters directly into the circulation with the food products. The prescribed dose produces a feeling of buoyancy, and removes depression and melancholy; *hence the preparation is of great value in the treatment of mental and nervous affections.* From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of the secretions, its use is indicated in a wide range of diseases.

Medical Letters may be addressed to:

Mr. FELLOWS, 48 Vesey St., New York.

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